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BRITISH MEDICAL JOURNAL

LONDON SATURDAY DECEMBER 18 1943

THE TREATMENT OF SCIATICA

AN ESSAY IN DEBUNKING

BY

Sir ARTHUR HURST, D.M., F.R.C.P.

Consulting Physician to Guy's Hospital

"The best time to be called to a case of sciatica is when the patient is beginning to get well."—HALE-WHITE, 1917.

"Heaven help the unsuspecting individual who wanders into orthopaedic out-patients these days and admits having sciatica."—ANONYMOUS SURGEON, quoted by Campbell Golding, 1939.

What is Sciatica?

By sciatica is meant pain in the distribution of the sciatic nerve. It was formerly thought to be almost invariably caused by inflammation of the perineural sheath and interstitial tissue of the sciatic nerve, except for a small number of cases of referred pain from disease of the hip-joint. Later, inflammation of the nerve roots was regarded as equally common. Many neurologists still believe neuritis and radiculitis to be the most frequent cause. Since Love in 1939 described how protrusion of the nucleus pulposus of the fourth and fifth lumbar intervertebral disk causes sciatica by exerting pressure on the fifth lumbar or first sacral nerve root, all neurosurgeons and some neurologists consider this to be a common condition and true neuritis and radiculitis to be rare. Symonds (1942, 1943), for example, recently stated that his experience with Service patients has convinced him that prolapsed disk is by far the most frequent cause, and he is unaware of any pathological evidence that true sciatic neuritis ever gives rise to sciatica. "The vision of an inflamed and swollen sciatic nerve so confidently stated to be the cause of the syndrome in question has never yet been granted to human eyes." It is somewhat surprising to read in an Army Medical Bulletin published in Oct., 1942, that fibrositis is the commonest cause of sciatica. According to Good (1942) the pain in the vast majority of cases, both in soldiers and in civilians, is referred from disease of the quadratus lumborum, glutei, and tensor fasciae latae muscles; it very rarely arises in the roots or trunks of the sciatic nerve.

The most recent theory concerning the pathogenesis of sciatica is that of an ex-president of the British Orthopaedic Association, who has expressed his conviction that spinal arthritis is by far the commonest cause (Bankart, 1943). Like Good, he does not even mention intervertebral disk prolapse as a possible alternative. He believes that the inflammation spreads from the joints to the spinal nerves in the intervertebral foramina and so causes neuritis. In his experience most cases respond to heat, massage, and exercises with or without manipulation, but persistent or recurrent pain calls for removal of the lateral intervertebral joints, an operation which "rarely, if ever, fails to cure the sciatica."

It is difficult to reconcile these divergent views, but a review of some of the many forms of treatment which have in turn been popular during the last 50 years suggests the likely explanation.

Treatment of Sciatica, 1901 to 1943

"For immediate relief the deep injection of morphine over the nerve is the most effectual treatment. Not infrequently we see suffering which has been almost intolerable thus removed, as by magic, within a few minutes" (Fagge and Pye-Smith, 1901). After mentioning this treatment, and also the injection of chloroform into the nerve, Osler (1912) adds: "It is remarkable how promptly, in some cases, the injection of distilled water will relieve the pain." Osler also advised a trial of acupuncture: "the needle should be thrust deeply into the most painful spot for a distance of about two inches, and left for from 15 to 20 minutes." This treatment is still sometimes used. Walshe (1941) writes that "acupuncture of the nerve with a series of specially designed needles is a useful and ancient remedy which acts by puncturing the sheath of the nerve and allowing the escape of inflammatory exudation."

A popular treatment in the early 'twenties was injection into the nerve trunk of 50 to 80 c.cm. of normal saline solution. The effect of this, according to Wilfred Harris (1926), was "to cause it to swell up in an egg-shaped form, separating the nerve bundles and bursting asunder laterally any adhesions that have been formed." Soon it became apparent that equally good results were obtained when the nerve root was missed and the saline solution was injected somewhere in its neighbourhood, when there could be no question of breaking down adhesions.

I do not know who first suggested substituting oxygen for saline solution, but this treatment was widely practised for a few years. Kinnier Wilson in his *Neurology* (1940) ascribed the benefit which followed to the provision of "a sort of air cushion for the inflamed nerve"—a quaint variation from the earlier notions about breaking down adhesions.

In 1930 William Evans reported the results of treating 40 cases of "primary, idiopathic, essential sciatica" by the intrasacral injection of about 80 c.cm. of fluid into the epidural space. As normal saline solution was as effective as novocain, and as pain was often experienced in the course of the nerve during the injection, it was presumed that it acted by stretching the nerve roots; and this was found to occur by experiment on the cadaver. Complete relief was obtained in 60% of cases and considerable benefit in 13%. For a time this method was widely used, but as it was more difficult to carry out without being any more effective, it was gradually replaced to a great extent by the older methods of injecting in or near the nerve trunk.

Good (1942), believing that the origin of the pain in sciatica is almost always muscular, states that he obtained permanent relief almost instantaneously by injecting procaine into each "myalgic area" in all but one of 65 cases, the one exception being not unnaturally assumed to be a malingerer. In striking contrast with Good's claims of permanent recovery following injection, Hyndman, Steindler, and Wolkin (1943), who were apparently unaware of his work, published results which seem to prove that his success must have been the effect of

suggestion and of nothing else. "Out of the fog of ignorance which has hung for so long over the subject," they write, it has become clear that all cases are due either to direct pressure by a herniated intervertebral disk or to a reflex neuralgia from a small well-localized painful area in the fibrous tissue of the lower part of the back. Apparently every case of disk pressure was subjected to operation, as there is no mention of any alternative treatment, and the possibility of spontaneous recovery with rest is not mentioned. In the fibrositic cases injection of procaine into the tender focus completely abolished both local and radiating pain. "*The patient was warned that with the wearing off of the procaine effect in from several hours to several days the pain, both local and radiating, would return worse than ever. Having enjoyed a brief spell of complete relief, he keenly resented the return of his complaint.*" Treatment by immobilization (traction, plaster, brace, cast, and occasionally operative), hot packs, massage, cathartics, and aspirin then led to gradual recovery.

Soldiers are even more easily suggestible than ordinary people, so that when they are sent to "the man who cures sciatica" they have their minds well prepared for his particular form of suggestion therapy. As Good finds myalgic points in 100% of soldiers with sciatica it is obvious that he must produce them by unconscious suggestion in at least 50%—a minimum estimate of the proportion caused by pressure on the roots or inflammation of the trunk of the sciatic nerve. Having suggested a myalgic point it is immaterial how he suggests it away, and an injection of novocain is as good a method as any other, although no doubt an injection of morphine, saline solution, air, or nothing at all would do equally well so long as there is a prick, as with the older forms of unconscious suggestion therapy by injection into or near the trunk or roots of the sciatic nerve. It is inconceivable that the analgesic effect of novocain could have any direct action, because the anaesthesia it produces is very evanescent, as Hyndman and his colleagues' patients found to their cost, and it could not influence the inflammation or other changes in the tissues which are supposed to produce the myalgic spots. The whole story is reminiscent of Babinski's method of curing hysterical paralysis. He had proved by a long series of investigations that hysterical anaesthesia is always the result of unconscious suggestion by the observer, and had no difficulty in inducing cutaneous anaesthesia in the paralysed limb by gross suggestion. He then cured the hysterical anaesthesia by painful faradism, at the same time suggesting that the associated paralysis would disappear, which it invariably did.

Hugh Wingfield, who had a great reputation for his success as a hypnotist about 25 years ago, invented a treatment of sciatica, a description of which was published in 1917 by Sainsbury, as Wingfield was too modest to do so himself. The treatment consisted in painting the skin over the course of the sciatic nerve with fuming hydrochloric acid; the skin was left uncovered till the fluid had completely evaporated. Although it would burn a hole in linen, it produced little or no irritation of the skin, so did not act by counterirritation. Wingfield obtained uniformly satisfactory results even in the most chronic cases, and Sainsbury also was much impressed with its value. I used it a number of times myself, and there was no doubt that it often led to the rapid disappearance of the pain. The fumes were so unpleasant that one had to protect one's eyes and nose during the application, and I have little doubt that the psychological effect of having the fuming fluid applied to the painful area was the cause of the success of the treatment.

Rational Treatment of Sciatica

Civilians engaged in hard manual labour and soldiers ought to be particularly easy to cure, because they are unable to carry on with their duties from the first day of an acute attack and so seek medical help at the earliest possible moment, just when treatment by rest gives the best results. Rest in bed from the onset of symptoms leads to rapid improvement, and often to complete recovery in two, three, or four weeks. Complete immobilization by splint or plaster is not often required, as the patient keeps sufficiently quiet and is far more comfortable if allowed to choose his position and vary it slightly from time to time. In exceptionally severe cases, however, fixation by means of a plaster spica, as "advocated 30 years ago by Hurst, is more successful than any other method" (Symonds, 1943). The patient should throughout be encouraged to expect rapid recovery, complete enough to allow a return to full duty within a fortnight of getting up. It will then be unnecessary to employ any of the forms of suggestion hitherto in use—injection into the nerve by the neurologist, the intervertebral space by the expert, or as near the nerve as he can get by the less expert, into the myalgic spots by those who believe in them, manipulation or a plaster case by two rival schools of orthopaedic surgeons, removal of herniated intervertebral disk by the neurosurgeon and of the lateral intervertebral joints by Bankart, or the application of fuming hydrochloric acid by the magician. Complete rest should be maintained until there has been no spontaneous pain for five days. The patient should then be given active movements in bed and should be allowed up a day or two later. At the same time any abnormality in his posture on standing and in his gait on walking should be promptly corrected by explanation, persuasion, and re-education. With such treatment very few patients will be unable to return to full duty within two months from the onset of symptoms. Without the simple psychotherapy involved in promoting the expectation of rapid recovery, followed by rapid rehabilitation, there is a great tendency for the pain and disability with the abnormal gait and posture to be perpetuated and exaggerated as a hysterical symptom This is especially likely to occur in the Services, where a man may subconsciously see in his illness a way of escape from an uncongenial life to the comparative comfort and safety of home, and among civilian manual workers, who subconsciously see in it a holiday and possible financial benefit.

Hysterical sciatica, with the associated hysterical posture and gait, may last for weeks or months until it is ultimately cured by the gross suggestion unwittingly given by the believers in the various forms of treatment I have already discussed, helped in the soldier by discharge from the Army and in the civilian worker by a successful claim for compensation. It can also be cured by simple psychotherapy in the form of explanation, persuasion, and re-education when its hysterical nature is recognized—often with great rapidity, even in very long-standing cases, as we found in the many cases of the kind in soldiers which we treated at Seale Hayne Hospital during the last war.

It is important to remember that a diminished or lost ankle-jerk and wasting may persist long after the complete disappearance of active disease. Their presence does not therefore indicate that persistent pain is due to organic disease, although it shows that organic disease must have at one time been present.

The few patients who do not get well after a month of complete rest in bed are among those who give a history and show physical signs of root pressure. A further period of complete rest may still lead to recovery, but if there has been little or no improvement they should be referred without further delay to a neurosurgeon, who will cure them by removal of the herniated intervertebral disk. Pennybacker (1942, 1943), who has verified the lesion at operation in over 150 cases in the past three and a half years, believes that the clinical syndrome of prolapsed disk is characteristic enough for a diagnosis to be made without recourse to lipiodol injections, which may set up a troublesome irritant reaction in the theca. All cases are probably traumatic in origin, but the injury may be trivial and no more than a strain. This is followed by low back pain, often diagnosed as lumbago, which may be severe or nothing more than slight discomfort. The incident is often forgotten, and not related by the patient to the subsequent sciatica; and, as Pennybacker points out, even in cases in which the sciatica follows close on the lumbago, the memory of the latter may be swamped in the more severe existing sciatic pain.

Symonds is convinced that, so far as Service patients are concerned, operation, even in the best hands, has proved so unsuccessful in getting men back to duty that a prolonged period of immobility should be advised, and when this fails to render a man fit for duty within a reasonable time he should be invalided. On the other hand, from my limited experience I have no doubt that, in severe cases in which complete rest has failed to cure, the results of operation are very satisfactory, as the patient obtains immediate relief from pain and is soon able to return to full activity. It is, however, just as important after operation as during treatment by rest to encourage the

patient to believe that his recovery will be rapid and complete, as there is a considerable tendency for a minor degree of pain or weakness to persist as a hysterical condition after the organic cause has been removed. This is especially likely to occur in patients who have already been disappointed at the failure to gain relief from prolonged treatment by rest, physiotherapy, and perhaps injections of one kind or another.

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EFFECT OF PREGNANCY AND PARTURITION ON PULMONARY TUBERCULOSIS

BY

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A voluminous literature has not provided any clear decision on the vital question of the effect of pregnancy and parturition on the phthisical woman. From the middle of the nineteenth century there was an increasing tendency to regard pulmonary tuberculosis, even when quiescent or arrested, as an indication for therapeutic abortion, and, though more recently the pendulum has tended to adopt a neutral position, the fear of the effect of pregnancy on the tuberculous still leads to many such operations. Surely it is time our ideas on this subject should have crystallized out? Moreover, in the last 20 to 25 years improved methods of treatment, and the hard-won skill medicine has gained in applying them, call for reconsideration of therapy which was in danger of being decided by custom. I have had the opportunity of studying this problem from personal experience, and this paper records the results of pregnancy and labour in 100 consecutive cases which have been confined in Black Notley.

The Maternity Unit at Black Notley Sanatorium

In July, 1937, the Essex County Council, in building additional wards at their sanatorium at Black Notley, provided a small maternity unit attached to one of the pulmonary wards. This was designed for the supervision and treatment of pregnant tuberculous women. Much of the success of this novel venture has been due to the advice and guidance of the late Dr. W. Burton Wood, consultant physician to the Essex County Council, whose clinical experience, and help in the solution of problems new to sanatorium administration, have been invaluable.

Any woman resident in the county of Essex who suffers or has suffered from pulmonary tuberculosis is eligible for admission. A number of cases of non-pulmonary tuberculosis have also been confined in this unit, but they are not included in this paper. As a general rule, quiescent cases are admitted 6 to 8 weeks before confinement, but a woman suffering from active disease would of course be admitted as soon as possible after the diagnosis of tuberculosis was made, and retained for treatment as indicated after the labour. A follow-up has not yet been made of the babies born, and this paper is concerned only with the effect on the mother; but it may be said here that none of the offspring revealed any evidence of tuberculous infection; neither has it yet been reported that any child subsequently developed tuberculosis, with the exception of one who was admitted to the sanatorium at the age of 2½ years suffering from tuberculous cervical glands.

Management of Cases

As regards the management of the expectant mothers, quiescent cases are encouraged to live what one may term an active sanatorium life—i.e., to walk up to two miles daily and perform the little daily tasks which form part of the normal life of such cases in a sanatorium. Progressive cases are managed in accordance with the extent and activity of their pulmonary disease, and on the usual sanatorium lines, including, where necessary, active treatment such as collapse therapy. During labour forceps are not applied as a routine in the second stage, as has been advocated, but only when a definite indication exists. As a general rule, however, no woman was allowed to go more than two hours in the second stage without their use being considered, and if there were signs of maternal fatigue without satisfactory advance of the head they would be applied. For anaesthesia, Minnitt's gas-and-oxygen apparatus is used for normal labours, and chloroform or gas-and-oxygen for any manipulation.

It was found that an artificial pneumothorax did not cause any embarrassment to the mother during labour; neither was it ever necessary to give a refill immediately after labour in order to compensate for the alleged fall in intrapleural pressures which has been thought to occur as a result of the descent of the diaphragm.

It must be emphasized that the results here reported are obtained under sanatorium conditions and only the immediate effects of the pregnancy and labour are available, but it s these which have so often been cited as the dangerous results of pregnancy.

The cases have been divided into three groups: (1) *arrested and recovered cases*—those in which there has been no clinical or radiological evidence of active disease for over two years; (2) *quiescent cases*—those in which the disease appeared to be quiescent on their admission to hospital for confinement; (3) *progressive cases*—those in which there was clinical or radiological evidence of active disease on admission to hospital for confinement.

Results

Any sign of retrogression, however slight, revealed by laboratory or *x*-ray examination has been accepted for the present purpose as being due to the pregnancy and labour, and, including all such cases, the results may be summarized thus:

TABLE I

Class of Case	No. of Cases	No. showing Retrogression
Arrested and recovered ..	46	3
Quiescent	29	2
Progressive	25	7
Totals	100	12

Increased pulmonary disease was observed in 7 out of 25 progressive cases, but only in 5 out of 75 quiescent, arrested, or recovered cases. The latter is probably no higher a proportion of breakdowns than might be expected to occur in 75 women of similar phthisical history and age group. Further, it would be misleading to assume that these figures indicate that the actively tuberculous show a significantly worse effect than the quiescent cases, as there is no reason to assume that the disease in the former would not pursue its steady and relentless course.

The following points were also brought out by study of the case histories:

1. Of the 3 "arrested and recovered" cases which retrogressed 2 subsequently improved; of the 2 "quiescent" cases 1 improved; and of the 7 "progressive" cases 2 improved.

2. The 12 cases which appeared to suffer as a result of pregnancy and labour all had normal labours. On the other hand the 23 cases which had forceps applied or other intra-uterine manipulations did not appear to suffer as a result.

3. Only 2 women had premature labours: in one of these the pulmonary disease was "recovered," and in the other "progressive."

4. The influence of age and previous pregnancies cannot properly be assessed on only 100 cases, but Table II summarizes the facts available, considering the cases which retrogressed:

TABLE II

	Arrested and Recovered Cases		Quiescent Cases		Progressive Cases		All Cases
	Under 30	Over 30	Under 30	Over 30	Under 30	Over 30	
Primiparae	2	1	2	0	1	2	8
Multiparae	0	0	0	0	3	1	4

Two-thirds of the patients showing retrogression were under 30 years of age, and two-thirds were primiparae. This does not support DuBois' famous remark: "If a woman threatened with phthisis marries she may bear the first accouchement well, a second with difficulty, a third never." The primipara has not had repeated pregnancies to threaten her general health; on the other hand, she is usually younger and in an age group which has a less favourable prognosis for her tuberculous condition than that of the average multipara. It seems probable that this is a more important factor than the number of babies she may bear.

Conclusions

The deductions based on this study of 100 cases of pulmonary tuberculosis complicated by pregnancy are probably accurate for cases of similar social circumstances. It is recognized that much larger figures must be produced before anything approaching statistical accuracy can be reached. None the less, enough experience has been gained to establish certain well-defined clinical impressions, and I have come to these conclusions:

1. Pregnancy and labour *per se* rarely exert any harmful effect on the progress of a woman known to have suffered from pulmonary tuberculosis.

2. It follows that therapeutic abortion is not a procedure to be resorted to simply because a woman is known to have suffered from pulmonary tuberculosis.

3. Active pulmonary disease is seldom accelerated by pregnancy and labour, and I have found that in such cases, treated under favourable conditions, pregnancy has been little more than an incident in their tuberculous career.

With these conclusions in mind, it is possible to counsel the tuberculous woman with greater confidence on the advisability of pregnancy or on the desirability of its termination if already established. It is not meant to imply that a woman suffering from active pulmonary tuberculosis should be encouraged to become pregnant; and there are, of course, other factors to be considered. In the above I have been considering the later stages of pregnancy and confinement supervised in a fully equipped sanatorium, and I am well aware that other considerations may have to be taken into account. There is the immediate and grave risk of infection to which the offspring may be exposed; there is the additional work, there are the disturbed nights, and sometimes the financial strain which may be imposed on the mother; and it may be distressing to a woman with advanced phthisis to endure the added discomforts and fears incidental to pregnancy. In some cases of advanced or very active disease the extra strain of pregnancy might be a precipitating factor to determine a devastating breakdown, and in such cases, if seen early enough in pregnancy, therapeutic abortion should be considered. On the whole, however, this investigation, though limited in numbers, indicates that so long as the tuberculous woman is placed under favourable conditions the risk of pregnancy to her progress has been exaggerated, and in the majority of cases it may safely be allowed to proceed to term.

I wish to express my appreciation of encouragement given by the late Dr. W. Burton Wood in the preparation of this paper, and my thanks to Dr. W. A. Bullough, County Medical Officer, and Dr. M. C. Wilkinson, Medical Superintendent, for permission to publish the results; and particularly to Mr. Alan Brews for his generously given advice and help in obstetrical problems.

DIFFERENTIAL DIAGNOSIS OF CHRONIC SCIATIC PAIN

A NOTE, WITH A SHORT ANALYSIS OF 100 RECENT CASES

BY

W. P. U. JACKSON, M.B., B.Ch., M.R.C.P.

Kellgren (1941) remarks that the term "sciatica" signifies a syndrome of deep pain and tenderness down the back of the leg and thigh, of varying distribution, and it is plain that this is a true statement of current usage. This being so, a diagnosis of "sciatica" without qualification is no more illuminating than a diagnosis of "abdominal pain." Three years ago Love (*Proc. roy. Soc. Med.*, 1939) made a similar remark, but nevertheless the term is still used as a complete and final diagnosis. An excellent War Office publication (*Army Medical Department Bulletin*, 1942) begins by calling for "a greater familiarity on the part of medical officers with the common causes of sciatica in the Army and of their corresponding clinical features."

Aetiological Analysis

Kellgren (1941) divides cases of sciatic pain into, first, referred pain from fascial structures in the back or round the hip, including also bone and joint disease, which, he states, accounts for three-quarters of all. The rest, except for occasional tumour or similar lesion, he believes to be cases of ruptured intervertebral disk. Bankart's topographical analysis presupposes direct involvement of the sciatic nerve, dividing cases into those with lesions of the cord, nerve roots, foraminal trunks, lumbo-sacral plexus, or peripheral nerve. Douthwaite (1933) divides cases into primary and secondary, and proceeds further to analyse primary ones into peripheral and central on clinical grounds which I find very difficult to follow. Symonds (*Proc. roy. Soc. Med.*, 1939, 1942) believes that the great majority of chronic cases are due to damaged disk, whereas analysis by Henderson (*Proc. roy. Soc. Med.*, 1939) of a large series from the Mayo Clinic showed the disk syndrome in 2% of all cases of low back or sciatic pain. Good (1943) claims that the vast majority (64 out of 65 consecutive cases!) arise as referred pain from "myalgic spots."

The cases here cited were all chronic or recurrent, most of which had been treated in several hospitals previously. The great majority were admitted to the neurological or neuro-surgical unit of an E.M.S. hospital during 1942 as unselected cases of "sciatica" mostly from the Services and resistant to ordinary treatment elsewhere. They represent in general those mixed cases of chronic sciatic pain occurring in increasing number, especially in the Services. All cases were examined by at least two doctors while in hospital, and the final diagnosis was approved by Dr. W. Russell Brain or Mr. D. W. C. Northfield. I have divided this series as follows:

Diagnosis	Number
Doubtful	21
Fibrositis (local)	20
Ruptured intervertebral disk	18
Hysteria	10
Fibrositis and neurosis	8
Congenital bony abnormality	4
Fibrositis (generalized)	3
Sciatic neuritis	3
Malingering	2
Sacro-iliac strain	2
Lumbo-sacral strain	2
Spinal osteo-arthritis	1
Bony infection	1
Neoplasm of cauda equina	1
Polyradiculitis	1
Secondary carcinoma	1
Disseminated sclerosis	1
Spastic paraplegia (? aetiology)	1
	100

Of the doubtful cases, seven were probable but unproved damaged disk, and the rest were mostly seen in the later stages of a pain from which recovery was occurring and which gave insufficient evidence for a positive diagnosis. These included doubtful cases of zoster, radiculitis, sacro-iliac strain, and fibrositis of the ligamentous strain type. There was also a probable case of spinal arachnoiditis and one of thickened ligamentum flavum, in which no disk damage was discovered at operation. Others were obscure, and often so rendered by superadded neurosis. The ruptured disk cases were all proved at operation.

The Importance of Neurosis

This aspect of the sciatica problem has been largely understressed. A knowledge of its frequency, mode of development, and clinical features is of paramount importance—in acute cases for prevention, and in chronic cases for recognition and prompt action. In the present series 10 cases were purely hysterical by the time we saw them. Eight cases of mild fibrositis had a gross overlay of neurosis, while the neurotic element was definitely present in a further 6 cases, classified here under the primary disease. Wilson (*Proc. roy. Soc. Med.*, 1942) also remarks upon the frequency with which neurosis occurs in "sciatica."

Symptoms and Signs

The various groups have been further analysed as regards their history and examination (Tables I and II).

stages, increasing the importance of early and thorough examination. One reason for this overlapping is the frequency with which the various aetiological factors are combined.

There may well be a history of injury to the back in cases other than those of damaged disk; nor is this even the usual thing in this condition (in this series, though Love and Walsh (1938) report such a history in 83%). Similarly, intermittence of the pain, though usual in the disk syndrome, is common throughout the series. Bilaterality of symptoms virtually excludes sciatic neuritis, but nothing else. Suddenness of onset seems more common with fibrositis, while the site of the first pain is more often the buttock in fibrositis and the low back in ruptured disks. Pain on coughing is usual in all groups. Sphincter disturbance, if not hysterical, points to a space occupying lesion.

TABLE I.—*Symptoms*

Diagnosis	Onset		Injury to Back		Inability to Straighten Up	Site of Primary Pain									Coughing		Onset associated with Febrile Illness	Pain Bilateral	Pain Intermittent	Sphincter Disturbance	Occupation: Driver of Heavy Vehicle
	Sudden	On Waking	Lifting	Other		Low Lumbar	Sacral	Buttock	Hip	Groin	Calf	Thigh	Ankle	Shoulders	Pain	No Pain					
Doubtful	6		1	3		8	2	7	1			3			18	2	2	3	16 (6? disk)		
Fibrositis (local)	6	2		2	2	3	2	10				2			14	4	2	4	13		6
Ruptured intervertebral disk	1	1	1	5	3	9		1		1		2	1		9	2		2	13	1	1
Hysteria	1	1		2		2	3	1		1		1			3	4		1	6		
Fibrositis + neurosis			1		2	3	1	1				2			6	2	1		5		1
Congenital bony abnormality	1					1		2	1						3	1			2	1	
Fibrositis (generalized)				1	1	1								2			2	1	1		
Sciatic neuritis					2	2						1			3		1		1		
Malingering								1			1							1			
Sacro-iliac strain				1		2									1				1		1
Lumbo-sacral strain	1		1		1	1		1							2				1		
Spastic paraplegia												1						1			
Spinal osteo-arthritis						1													1		
Caudal neoplasm						1						1						1	1	1	
Bony infection															1						
Polyradiculitis						1									1						
Secondary cancer								1				1									
Disseminated sclerosis													1			1					
Total	16	4	4	14	11	35	8	25	2	2	1	14	2	2	61	16	8	14	62	3	9

TABLE II.—*Signs*

Diagnosis	Weakness				Wasting			Sensory Manifestations		Complete Absence of Tenderness	Lasègue Test Negative	Ankle-jerk Diminished		Back Deformity		*X*-ray Abnormality		Cerebrospinal Fluid	
	Functional	Ankle Only	Gross	Total	Moderate	Gross	Including Quadriceps	Paraesthesia	Anaesthesia			Unilateral	Bilateral	Scoliosis	Flattened Lumbar Curve	Total	Of Definite Diagnostic Value	Protein over 50 mg. per 100 c.cm.	Other Findings
Doubtful	3	4		10	3		1	2 Both ? disks	5	5	3	6	1	4	3	4		6	
Fibrositis (local)		2		2							2			3	1				
Ruptured intervertebral disk		4		4	2	2	1	7	5		3	7	3	3		1		4	One block at L 4–5
Hysteria	6	1	1	6				2	3	1	2					1			
Fibrositis + neurosis	4	2		5					3			1				2		1	
Congenital bony abnormality				1				1 Spondylolisthesis	1			2	1	1	1	4	4	2	
Fibrositis (generalized)											1								
Sciatic neuritis		1	1	3	2	1			2			2			2			1	
Malingering										2									
Sacro-iliac strain					1											1			
Lumbo-sacral strain					1			1								1			
Spinal osteo-arthritis				1	1		1				1	1				1	1		
Bony infection				1			1					1				1	1	1	
Caudal neoplasm			1	1		1						1							
Polyradiculitis		1		1			1						1	1				1	10 lymphocytes
Secondary carcinoma																			5 lymphocytes
Disseminated sclerosis				1															
Spastic paraplegia				1					1										
Total	13	15	3	37	9	4	5	13	20	8	12	21	6	12	7	15	6	16	
					13							27							

Notes based on the Tables

Overlapping.—The first thing which emerges from a consideration of a number of cases of sciatic pain is the realization of a complete absence of a single clear-cut group. The majority of all the symptoms and signs may occur in any group, and no one is pathognomonic. This overlapping is a cause of difficulty in the accurate diagnosis of the "sciaticas," and means that there must be a number of "doubtful" cases. The more characteristic signs are most likely to be present in the early

To be of real value true weakness or paresis must be at least moderate in degree, since, even allowing for the reluctance to move caused by pain, it seemed clear that uncomplicated fibrositis often produced evident, though never severe, weakness of the affected part, or even distant from this (e.g., eversion of the ankle in gluteal fibrositis). Such patients may show mild, but certain, wasting of the muscles involved, perhaps due to disuse in these cases of long standing. Paraesthesia and sensory loss occur only in direct involvement of the sciatic nerve or as hysterical phenomena. Postural loss in the toes was here

found in one patient only, who had a ruptured disk severe enough to produce almost complete spinal block.

Postural deformities of the back are non-specific, and Lasègue's test (straight leg raising) is valueless on its own in diagnosis, though useful in assessment of severity and progress. The result of the test should be compared with the patient's ability to touch his toes, and, in organic cases, these two will correspond. The foot plantar-flexion and dorsiflexion modifications of this test seem to be of no diagnostic value. A raised protein in the cerebrospinal fluid signifies an organic lesion, and is common in, but by no means confined to, cases of ruptured disk. Symonds remarks that in any "long-standing sciatica" the protein may be raised to between 40 and 100 mg. per 100 c.cm.

Tendon Reflexes.—Diminution or absence of ankle-jerk is significant as indicating an organic lesion of the sciatic nerve. Bilateral absence or equal diminution may, however, be congenital or be due to coincident disease. Further, an absent ankle-jerk on one side is not necessarily evidence of present disease, since it may remain permanently depressed after an attack of sciatic neuritis from which recovery has otherwise been complete. In one case of doubtful aetiology, in fact, the reflex was absent on the side opposite from the pain, being brisk on the same side. Bilateral depression of the reflex usually indicates a space-occupying lesion (six cases in this series).

The Value of Straight Radiographs.—In this series abnormalities were revealed by radiographs of the lumbo-sacral region in 16 cases, but in only six were these considered of primary significance. There were included two cases of spondylolisthesis, three of unilateral sacralization of the fifth lumbar vertebra, one of bilateral sacralization with absent twelfth ribs, one spina bifida occulta, two of osteo-arthritis, and a further probable osteo-arthritis with an enormous osteophyte protruding from the body of the fifth lumbar vertebra. This osteophyte, however, and one of the sacralized vertebrae also were on the side opposite to the affected limb. Considerations of this sort must make one chary of accepting x-ray evidence as a diagnostic criterion *ex cathedra.*

*A Type of Fibrositis.**—Some of the cases of fibrositis appeared to be associated at their onset with a febrile illness resembling influenza, in which aches and pains were felt first in the back (as is, of course, common in influenzal chills) or in the back and round the shoulders, and then, instead of going away in a few days, remained present, becoming chronic and recurrent. If significance is to be attached to these eight cases, then it would seem either that influenza or influenza-like illnesses should be added to the list of causal factors in fibrositis, or else that fibrositis itself may at its inception be a febrile illness.

Conclusion

Some people still consider "sciatica" synonymous with "sciatic neuritis," and then, calling all cases with pain in the back of the leg "sciatica," make these, *ipso facto,* cases of sciatic neuritis. It is generally agreed that "true sciatica" or sciatic neuritis is uncommon in young people. If there are signs of involvement of the sciatic nerve itself then a ruptured disk is more likely.

Ruptured intervertebral disk, fibrositis, and neurosis are the three states of greatest importance in the causation of chronic sciatica in young people; they correspond with the three types of sciatic pain—namely, neural, referred, and functional—into one of which latter groups all cases of sciatic pain should be placed as a preliminary step in accurate diagnosis.

I should like to thank Dr. Russell Brain and Mr. Northfield for their advice and permission to make use of the material supplied by their patients, and also Mr. R. L. Galloway, medical superintendent of Chase Farm Hospital, for his permission.

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* Since this was written a somewhat similar suggestion has been made by Lieut.-Col. W. S. C. Copeman in an article in the *Journal* of Aug. 28, 1943, p. 263, which he has developed more fully.

THYMECTOMY FOR MYASTHENIA GRAVIS

BY

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The association of an enlarged, persistent, or cystic thymus gland with myasthenia gravis has long been known. The removal of a thymic cyst in a patient with myasthenia gravis was reported by Blalock *et al.* in 1939. The patient had been operated on four years before, and had apparently remained cured for that period. Since that report the operation of thymectomy for this disease has been performed, sometimes successfully, by different surgeons.

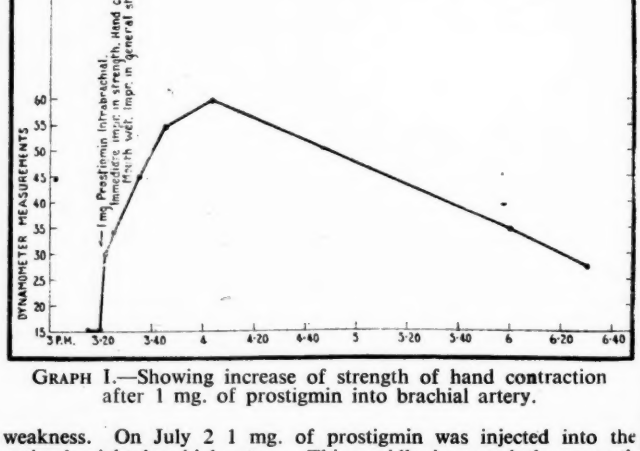
Blalock, Harvey, Ford, and Lilienthal (1941) recorded six cases of thymectomy for myasthenia gravis, with one post-operative death. Of the remaining five cases, three after a varying period were cured and needed no more prostigmin; two were improved but still needed prostigmin. More recently, in England, James Carson (1943), in a report on nine cases of thymectomy for myasthenia gravis, stated that three of these patients had died after operation; three had recovered and needed no prostigmin, and remained well for three, six, and nine months after operation. Three showed no improvement. Russell Brain (1943) reported three cases of myasthenia gravis in which he had recommended thymectomy, but none of these cases had improved as a result of the operation.

Case Report

A nurse in a London hospital, aged 23, first attended Dr. Wilfred Harris's out-patient clinic at St. Mary's Hospital on May 19, 1942. She gave a history of having been quite well until the beginning of March, when, after a bad cold, she began to have difficulty in swallowing, nasal regurgitation of food, and diplopia. These symptoms were becoming progressively worse, and for the preceding two weeks she had noticed weakness in the arms as well. The symptoms were always worse at the end of the day.

Examination disclosed weakness of the soft palate and weakness of eye and lip movements. The patient had obvious ptosis and diplopia, and also a myasthenic facies. She was at once admitted to the wards, and responded dramatically to 2 mg. of prostigmin subcutaneously, being able to eat normally for the first time for two months. She could now close her mouth, whereas this was impossible before the injection. Her prostigmin requirements increased throughout the period of her first stay in hospital from two injections of 2 mg. a day to one injection of 2 mg. in the morning and 30 mg. by mouth four times a day. She was discharged on June 13 on this dosage.

She was readmitted on June 27 needing about the same amount of prostigmin, but her requirements rose from this time until, about two months later, she was receiving 225 mg. daily to control her weakness. On July 2 1 mg. of prostigmin was injected into the patient's right brachial artery. This rapidly increased the strength of the right hand, which was maintained for over three hours. Graph I illustrates this increase of strength. F. R. Fraser *et al.* (1937–8) by injecting prostigmin into the femoral artery showed the resulting increase in strength in the limb. Harvey and Lilienthal (1941) found that if 0.5 to 1 mg. of prostigmin is injected into the

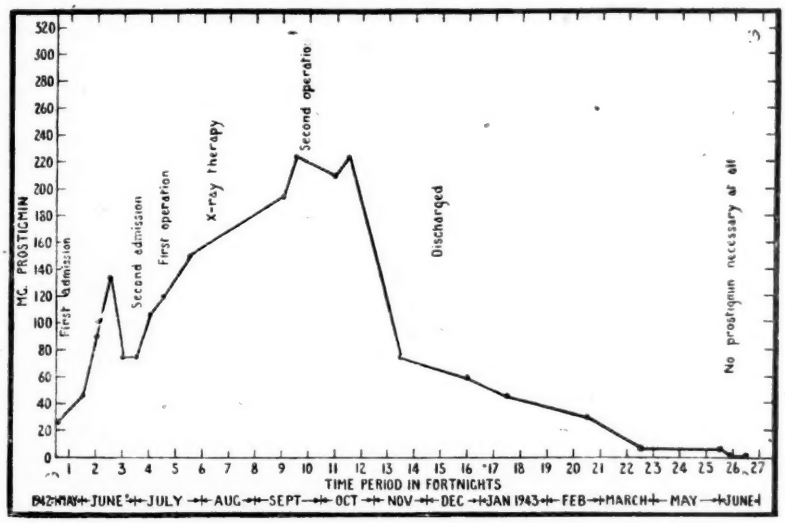


GRAPH I.—Showing increase of strength of hand contraction after 1 mg. of prostigmin into brachial artery.

brachial artery of a myasthenic patient strength of the hand is maintained or increased, whereas the hand of a non-myasthenic becomes weak and the muscles fasciculate.

On July 6 Mr. Dickson Wright removed a portion of the thymus gland through the suprasternal notch, using a suprasternal incision in the neck. She appeared to improve very slightly after this operation, but soon relapsed. On July 29 Dr. Courtenay Gage gave deep *x*-ray therapy to the thymus gland. The patient did not seem to improve after this therapy, and was discharged on Aug. 24, being treated with prostigmin as an out-patient.

On Sept. 16 she was urgently readmitted, being almost bedridden. At this time she was needing an injection of 2.5 mg. of prostigmin at 6 a.m. and 225 mg. during the rest of the day. On Sept. 21 Mr. Dickson Wright removed the rest of the thymus gland by splitting the sternum. The gland was as usual bilobed, and on the right side went quite deep between the mediastinum and pleura. She made an excellent recovery from the operation, but for the next six weeks required as much prostigmin as before the operation. From the middle of November onwards she began to need less and less, and in Feb., 1943, received only 30 mg. a day, and in March about 15 mg. (Graph II). Since June 7 she has not required any prostigmin at all, and she feels as fit and as strong as she "has ever felt in her life."



GRAPH II.—Showing decreased need for prostigmin after thymectomy for myasthenia gravis.

Pre- and Post-operative Treatment for Thymectomy

The onset of an upper respiratory infection often accompanies the onset of myasthenia gravis or causes an exacerbation of the condition. It is therefore very important to prevent any infection in the pre- and post-operative periods. Blalock and others (1941) recommend the following regime. They advise against operation if there has been a history of infection for the preceding ten weeks. The patient's blood should be cross-matched with a donor. Enough sulphadiazine should be given to maintain a blood level of 5 or 6 mg. per 100 c.cm. Thirty minutes before induction of anaesthesia 1.5 to 2.5 mg. of prostigmin, 0.6 mg. of atropine sulphate, and 0.6 gr. of morphine are given subcutaneously. At the end of the operation, usually one to one and a half hours after induction, 1 to 1.5 mg. of prostigmin and 0.6 mg. of atropine are given. The post-operative dose of prostigmin is based on the dose required pre-operatively—usually 1 to 1.5 mg. every two hours for the first day; after this 30 to 45 mg. by mouth two- to three-hourly Often there is an increased need for the first two days following operation, and only after a few weeks does the requirement lessen. In the present case the prostigmin requirement was less only after about six weeks, which is longer than in previously reported cases, and more time was needed for completion of treatment.

It is well known that myasthenia gravis is characterized by remissions. Dr. Wilfred Harris in a personal communication has informed me of a case of his that appeared to be well for 20 years, and then relapsed. It may be that thymectomy effects a remission and not a permanent cure. There, however, seems enough evidence now to warrant a thymectomy in every case of myasthenia gravis.

Although Mr. Dickson Wright in this case operated in two stages, he informs me that he has since employed a one-stage sternal splitting method. It is generally agreed that the latter is the method of choice.

Rationale of the Operation

Norris (1936) stated that 50% of the reported cases of myasthenia gravis coming to necropsy have shown some form of thymic involvement. Half of these reveal what have been regarded as benign tumours of the thymus. Norris interprets these as conditions of extreme epithelial hyperplasia. The other half he interprets as conditions of moderate epithelial hyperplasia. In our case Prof. W. D. Newcomb reported on the thymus as follows: "Thymus with hyperplastic lymphoid tissue. Small Hassall's corpuscles, very little fat. In view of her age of 23 the organ is certainly hyperplastic." Harvey and Lilienthal (1941) state that it seems reasonable to assume that some inhibitor substance released into the circulation in varying amounts might be responsible for the functional defect in myasthenia gravis. They further state that there is much evidence which points to the thymus as a possible source of this hypothetical substance.

Adler (1938) claimed to reproduce the disease in dogs with grafts and saline extracts of calf thymus, but his work has not been confirmed.

Summary

A successful case of thymectomy for myasthenia gravis is reported Other successful cases recorded in the literature are mentioned Pre- and post-operative treatment is discussed. A brief summary of the rationale is given.

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THE EFFECT OF CHEMOTHERAPY ON THE MORTALITY FROM PNEUMONIA IN GLASGOW

BY

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In certain infectious diseases it has not been difficult to show that the introduction of sulphonamides has had a good effect upon the general mortality. Martin (1942) in a straightforward comparison was able to demonstrate that in cerebrospinal fever and puerperal sepsis a definite change had occurred coincidently with the introduction of these drugs. In his examination of pneumonia, however, he noted that "although there has been an undoubted decrease in the mortality rate . . . an estimate of its extent is rather speculative," and suggested that in the period 1939–41 the expected deaths might have been 10% higher than those actually recorded. This can scarcely be regarded as a tremendous achievement, especially since the clinician has recorded reductions in case fatality rates to about a third of their former level. Further, chemotherapy has the particular merit of simplicity of administration, so that in a general way it should be as effective at home as in hospital. It has been shown (Anderson, 1943) that the efficiency of sulphapyridine is impaired in those over the age of 40 years. Since pneumonia is more severe in the older age groups it seems possible that the apparently slight reduction in general

mortality might be caused by a continuing high mortality in those past middle life. The purpose of this analysis is to study such a possibility.

Since 1922 the Medical Officer of Health for Glasgow has encouraged the notification of cases of pneumonia, and has annually made available a considerable amount of accommodation for their treatment in hospital. Smith (1928) estimated that about 75% of the cases occurring in the city are notified. As he pointed out, the fact that the notified cases represent only three-quarters of the total incidence makes the figures of little value in estimating mortality rates. Despite the validity of this criticism, the notification figures presumably reflect the prevalence of the disease, and they therefore have a value in assessing the fluctuations in annual incidence. A further inference, however, may be drawn—namely, that from year to year the practitioner will notify similar types of case, and, of immediate importance, that the age-grouping of the notifications will reflect the age-grouping of the disease in the community. Although he may tend to notify more cases from those age groups in which the disease is more severe, it seems reasonable to suggest that such a tendency will remain fairly constant from year to year.

Now, a crucial difficulty in assessing pneumonia mortality is the lack of figures expressing the incidence of the disease. If the present argument is sustained, however, it should be permissible to compute the ratio of deaths to notifications for different age groups in two periods of time, and, by comparing them, to assess any changes which had occurred between the mortality of these age groups. The accompanying table shows

Table showing Notifications and Deaths from Pneumonia in Glasgow, 1922–41

Age Group (Years)	1922–38			1939–41			Ratio $\frac{B \times 100}{A}$
	Notifications	Deaths	Deaths per 100 Notifications (A)	Notifications	Deaths	Deaths per 100 Notifications (B)	
0–1	18,234	8,920	49·02	3,088	1,135	36·76	75·0
–10	46,693	6,795	14·45	5,630	375	6·67	46·2
–20	8,777	586	6·67	1,314	31	2·36	35·3
–45	13,759	3,760	27·33	2,280	264	11·58	42·3
46+	12,640	9,038	71·53	2,910	1,318	45·29	63·3
All ages	100,103	29,099	29·09	15,222	3,123	20·51	70·5

the relevant figures for the pre-sulphonamide period 1922–38 and for 1939–41. In column 8 the ratios of deaths per 100 notifications in 1939–41 have been expressed as a percentage of those encountered in 1922–38. It is clear that the change which has occurred in the last three years is more marked in certain age groups than in others, the fall under 1 year and over 45 years being less striking than it is between these ages. It is justifiable to conclude that the cause of the reduction in mortality noted in 1939–41—presumably chemotherapy—has been less effective in those extreme age groups. The table indicates too, as one would expect, that the ratios for the total figures in the two time intervals show a fall of less than a third in the 1939–41 period: in other words, the poor results at the extremes of life do mask the benefits sustained in the middle age groups.

Discussion

In the first place there is no doubt that the consolidation is more usually bronchial in distribution at the extremes of life, whereas a lobar pneumonia is the more characteristic lesion in middle life. As Cruickshank (1943) has recently pointed out, bronchopneumonia affects primarily the mucous membrane of the bronchial tree. Actual invasion of the lung parenchyma is less in evidence; while a more generalized invasion (as judged, for example, by the occurrence of bacteriaemia) is much less common than in lobar pneumonia. This places the organism in a situation almost, as it were, outside of the body and so less liable to the action of sulphonamides. In lobar pneumonia, on the other hand, the very invasion of the lung parenchyma places the organism not only in a position more accessible to the drug but also (again in contrast to bronchopneumonia) to the action of the phagocytes.

Such an explanation invites the further question as to what influences the form of the consolidation. The modern concept regards bronchopneumonia as an autogenous infection, and before autogenous infection can occur the individual resistance has presumably been considerably reduced. Despite this lowered resistance of the host the organisms are of such low virulence or invasiveness that tissue invasion is not a prominent feature. The pneumococci isolated from cases of lobar pneumonia, on the other hand, usually belong to the more invasive Types I, II, V, and VII—types which are rarely isolated from normal throats. Here, one may assume, the individual resistance is not so low as to permit infection by the commensal strains of low virulence. Such a conception suggests that lobar consolidation is the mode of reaction of the individual whose basic resistance to pneumococcal infection is high; whereas bronchopneumonia is the reaction of the individual whose basic resistance is poor.

The importance of this element of non-specific or native resistance in the pathogenesis of pneumonia is further emphasized by the well-established relationship between high incidence and bad social and environmental factors. That these factors possibly operate more harshly at the extremes of life might be suggested from the curve of case mortality with its peaks at the extremes of life. Britten (1942) has recently reported a valuable analysis of the incidence of pneumonia as recorded in the National Health Survey carried out in America during 1935–6. Although the analysis in respect of economic status shows a correlation with each age group (except those over 75 years) the effect is most marked in infants and young children. Similarly in respect of overcrowding (although here the cases are only divided into three broad age groups) the effect is most pronounced in the two outside age groups and least between 15 and 24 years. Smith (1928), too, showed that the mortality under 5 years of age was closely related to environmental conditions.

That these are necessarily the only factors operating to produce the apparently poorer results at the extremes of life is unlikely, but their restatement is perhaps timely. The present tendency is to emphasize two main aspects of chemotherapy—namely, the susceptibility or resistance of the pathogen to the drug, and the rapid attainment of what is usually termed an optimum level of drug in the blood stream. It is not sufficiently stressed that the most successful achievement of bacteriostasis still requires the host not only to cope with the destruction of the bacterium but to restore the inflamed tissues to normal. The capacity of the host to react aggressively to his infection is clearly an essential element in his recovery; and consideration of the results of chemotherapy in pneumonia would suggest that in the absence of this resistance the infection may not be stemmed in individuals who are unable to fulfil their part of the bargain.

To define what is meant by non-specific resistance is not easy. The study of natural resistance has been neglected mainly because our present picture of acute infections lays so much emphasis upon the bacterial cause and the specific immune reactions to which it gives rise in the host. The failure of specific antisera and vaccines to enhance the effect of the sulphonamides in pneumonia—and perhaps in cerebrospinal fever (Beeson and Westerman, 1943)—suggests that those who now die do not die because of any lack of specific antibody. It may be advanced that knowledge of what will increase non-specific or tissue resistance is required if the results of chemotherapy are to be improved.

Summary

The success of chemotherapy in hospital clinical trials has the danger of inducing complacency regarding the problem of pneumonia control. When it is realized that the fall in general mortality is comparatively slight, there is clearly little room for satisfaction. Figures are presented which suggest that sulphonamides are less effective in the treatment of pneumonia at the extremes of life; and the possibility that this relative failure is due to a lack of non-specific resistance is discussed.

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Medical Memoranda

Immediate Blood Transfusion in Obstetric Shock

The following record shows the value of immediate blood transfusion in a case of obstetric shock with normal labour and without excessive haemorrhage.

CASE HISTORY

Mrs. B., a primipara aged 28, started labour pains in the early hours of July 28, 1943. Uneventful first and second stages of labour resulted in the normal birth of a female child at 9 p.m. under short terminal chloroform anaesthesia. The fundus uteri, easily palpable at about the level of the umbilicus, soon began to contract, and expulsion of the placenta by Credé's method was attempted without success. The patient's condition was quite good; she had come out of the anaesthetic, her pulse was regular—about 90 beats a minute—and her total blood loss was less than one pint. At about 9.30 p.m., however, she turned very pale and her pulse accelerated to about 120. Abdominal palpation revealed a hard rounded fundus uteri below the umbilicus; there was no visible haemorrhage per vaginam. The placenta was still *in utero*. There was no doubt this was a case of obstetric shock, so the usual anti-shock measures were adopted: the foot of the bed was raised, hot-water bottles were applied, both legs were bandaged, and 1.5 c.cm. of nikethamide (coramine) was injected. No improvement was registered in the patient's condition, and very soon her skin became cold and moist, her lips and gums blue, the pupils dilated, the pulse more rapid (about 180 a minute) and of low tension. Glucose-saline was then given rectally, and St. Bartholomew's Hospital was telephoned with a request for its "flying squad" for immediate blood transfusion. On returning from the telephone the patient was found to be unconscious; her pulse was only just perceptible, and Matron reported that breathing had actually stopped for a short time. Fortunately, the rectal glucose-saline was being retained, and, to my relief, in less than an hour the "flying squad" arrived. It comprised a surgical specialist, an anaesthetist, and a house-surgeon. Very quickly, quietly, and efficiently they set to work and transfused two pints of universal whole blood. The result was incredible. When only one pint had been introduced the patient regained consciousness and the pulse volume increased appreciably, while at the end of the transfusion the pulse was about 100 and had quite good volume. Later, under anaesthesia the placenta was easily expressed with practically no blood loss. With the exception of a rise in temperature on the second day, and a slightly accelerated pulse which persisted for a few days, the patient made an uneventful recovery.

COMMENT

In a case of prolonged labour, or in a difficult forceps delivery, one would not be surprised to find some degree of obstetric shock comparable to that normally observed in surgical trauma. In a normal labour, however, without excessive haemorrhage, post-partum collapse as described above must be rare indeed. In fact, this is the first case I have seen in the course of over 20 years' practice. It would be interesting to know the cause of such a sudden collapse. It has been claimed (Matthews, 1939) that the parturient is especially predisposed to shock, owing to a hypersensitiveness of the nervous system, which is said to be markedly developed during pregnancy. Can it be explained as a result of an intra-abdominal vascular change due to the sudden emptying of the uterus, or as a result of venous stasis, produced in the abdominal cavity by some action of the splanchnic vasomotor system, comparable to the shock occasionally seen after the administration of a large dose of pituitary extract? Has it anything to do with the retention of the placenta?

With regard to the treatment of the condition, the value of an immediate blood transfusion has to be seen to be believed. Yet from an analysis of 765 blood transfusions for obstetric conditions causing haemorrhage and shock conducted at the Glasgow Royal Maternity Hospital, Sheehan (1942) concluded that, whereas the mortality from haemorrhage had been much reduced by transfusions, the mortality from shock was unaffected by them, the general conclusion being that "the value of blood transfusions in shock is doubtful." The discrepancy in the results is, I submit, due to the delay in performing the blood transfusion. This must be given early, as otherwise a condition of "irreversible shock" is reached. As Levinson (1942) says, "early shock in most instances responds very favourably [to blood transfusion], but if the condition has existed for any appreciable time little or no effect is observed."

As the time factor is of such vital importance I would stress the value of blood transfusion "flying squads" and of providing plasma and plasma-transfusing apparatus in nursing homes and the maternity wards of hospitals.

London, N.10. I. S. FOX, M.B., Ch.B.

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Reviews

ENVIRONMENT AND INFANT MORTALITY

Birth, Poverty, and Wealth. A Study of Infant Mortality. By Richard M. Titmuss. (Pp. 118. 7s. 6d.) London: Hamish Hamilton Medical Books. 1943.

The object of Mr. Titmuss's study is to show (1) that, in spite of the general fall of infant mortality during the last 30 years, the relative advantage of the economically most prosperous class over the least prosperous class has been maintained or even increased; (2) that environmental rather than congenital or hereditary factors are responsible for social-economic diversity.

In analysing the data of 1911 the General Register Office first attempted a social-economic classification, five classes being formed. In successive censuses the classification has been improved, with the inevitable result that comparability has been disturbed. Taking the figures as they stand the rate of infant mortality classified by social-economic class of father in 1911 was twice as high in the lowest as in the highest class. In 1930–2 it was 2.35 times as large; over the period the rate of mortality had fallen from 153 per 1,000 to 125 per 1,000 in the worst social-economic class, from 76 to 53 in the highest class. Mr. Titmuss, aware of difficulty of comparison, made a selection of clearly defined occupations, and his figures make the ratios 2.9 and 2.62 respectively—namely, some but not very much improvement. The official figures show a slight improvement between 1921–3 and 1930–2. A comparison is also made of special occupations. It is possible that Mr. Titmuss is over-anxious to prove a deterioration; a lack of improvement is ample basis for his general argument.

The author then examines the death rates in different sections of the first year of life, reaching conclusions in agreement with those of official commentators—namely, that the social-economic difference is least in the first month of post-natal life, but that even here much of the mortality is preventable. Mr. Titmuss argues strongly against the opinion that heredity is almost everything and environment goes for very little in the determination of infant mortality rates, and also condemns the light-hearted view that a high rate of infant mortality is for the good of the race because it eliminates the "unfit." For the most part Mr. Titmuss is forcing an open door here, and may, perhaps, have gone a little too far in his depreciation of hereditary factors. It is surely true that, *under equally favourable environments*, selective breeding effects a good deal in producing valuable physical qualities in farm stock or race-horses. However, over-enthusiasm can be forgiven; the author has focused much valuable information.

A STUDENT'S TEXTBOOK OF SURGERY

The Essentials of Modern Surgery. Edited by R. M. Handfield-Jones, M.S., F.R.C.S., and A. E. Porritt, M.Ch., F.R.C.S. Second edition. (Pp. 1,204; illustrated. 40s., plus 11d. postage.) Edinburgh: E. and S. Livingstone. 1943.

The first edition of this book, noticed in our columns at the end of 1938, required reprinting. The demand has continued and a second edition became necessary. The preparation of this has fallen on the senior editor, as his co-editor is away on active service. An expansion and an extensive revision of the articles on wounds, burns, haemorrhage, and shock have been made so that these subjects now occupy two chapters, and represent the results of those modifications of our views and methods of treatment which have come about as the result of this war. There are many new illustrations, including some coloured reproductions of oil paintings made by Miss Zinkeisen. Some figures are borrowed from *Surgery of Modern Warfare*, others from Mr. Watson-Jones's book on fractures. The reproduction of all these is good and so is the printing of the text, so that this edition adds further to the reputation for high quality which the publishing house responsible has been rapidly acquiring in recent times. We find little in the text with which to quarrel, but some confusion seems to exist in the mind of the author of the section on the brain and its coverings in distinguishing between cerebral hernia and cerebral fungus (p. 870). We cannot agree with him that the term "cerebral hernia" should not be applied to those protrusions of brain matter through a deliberately planned decompression

opening, but, on the contrary, regard such as fulfilling all the criteria of a hernia.

On the work as a whole we congratulate both the editor and those contributors whose revision has done much to improve the original text. This second edition should add to the popularity of a now well-established textbook which can be safely recommended to the medical student, of whom it might be said the editor has not only had much experience as a teacher, but (what is perhaps equally important) as an examiner also.

CUNNINGHAM'S TEXTBOOK OF ANATOMY

Cunningham's Textbook of Anatomy. Edited by J. C. Brash, M.D., F.R.C.S.Ed., and E. B. Jamieson, M.D. Eighth edition. Oxford Medical Publications. (Pp. 1,558; illustrated. 60s.) London: Oxford University Press. 1943.

The eighth edition of this work is signalized by a considerable change in the authors who have had a share in its production; this is due partly to the regrettable loss by death of some of its most distinguished contributors—namely, Sir G. Elliot Smith, Prof. T. Wingate Todd, and Prof. David Waterston—and partly to the transference of Sir John Stopford from the chair of anatomy at Manchester to the Chancellorship of that University. These authors have been succeeded by Prof. W. E. Le Gros Clark (central nervous system); Prof. J. C. B. Grant, University of Toronto (respiratory system); Prof. M. R. Drennan, University of Capetown (digestive system); and Prof. A. Durward, University of Leeds (peripheral nervous system). The description of the urogenital system, originally written by the late Prof. A. F. Dixon, has been undertaken by Prof. C. P. Martin, McGill University, Montreal, and a special section on radiographic anatomy by Prof. R. McWhirter of Edinburgh University has been added to the section on surface and surgical anatomy by Sir John Fraser. The work has been edited by Prof. J. C. Brash, with the assistance of Dr. E. B. Jamieson. It is at once evident that the contributors to the present edition are representative not only of British universities but also those of Canada and South Africa.

Perhaps the most striking change in this edition is the inclusion of a large number of photographic and radiographic illustrations and a valuable addendum on radiographic anatomy, comprising a brief account of special methods of examination—e.g., by "contrast media"; this supplies a much-needed standard for interpretation of many appearances seen in radiographic films of normal, healthy individuals of varying ages and sex. Among so many excellent radiographic films it is difficult to choose examples of surpassing merit, but perhaps the reproduction in Plate LXXX of a series illustrating the expulsion of bile by the gall-bladder, as revealed by the administration of "S.T.I.P.P." followed by a fatty meal, and those shown on Plate LXXV, illustrating the course of the foetal circulation and the closure of the ductus arteriosus and ductus venosus in the sheep, by Dr. A. E. Barclay and his colleagues at the Nuffield Institute, Oxford, may be specially noted. Some additional matter bearing on recent research work has been incorporated in all sections of the book, and in face of so much commendable good work there is little to suggest in the way of constructive criticism beyond expressing the view that descriptions of microscopic structure should, in order that they may be clearly understood by readers not already acquainted with the subject, be accompanied by illustrations of actual microscopical preparations, and that the time has now come when many purely diagrammatic figures may be replaced by accurate drawings or photographs of particular tissues, or of some stages in embryonic development.

Notes on Books

Dr. EDWIN O. GECKELER, believing that every doctor who undertakes emergency work should be able both to insert a Steinmann pin or a Kirschner wire and to carry out proper wound excision without delay, wrote *Fractures and Dislocations for Practitioners* with the object of helping the less experienced in the practice of such procedures. The third edition introduces much recent work relating to fractures which has been learned from war experiences. Attention is appropriately given to chemotherapy, developments in which have practically revolutionized the treatment of wounds. "Bumper" or "pedestrian" fracture receives due consideration and is well illustrated, but "clay shoveller's" fracture is not mentioned in connexion with the industrial group which includes "dash-board" fractures of the patella and "dash-board" dislocation of the hip. This edition brings a valuable and conveniently sized book up to date and thus adds to the value of an already established work. Illustrations are excellent—it is interesting to notice that one or two are redrawn from Sir Astley Cooper—and the production does not appear to have suffered in any way through wartime publishing restrictions. This is an excellent handbook which can be thoroughly recommended. It is published in England by Baillière, Tindall and Cox at 25s.

The Expectant and Nursing Mother's Cookery Book, written by CECILIA HOOGENDOORN, has a foreword by Mr. W. C. W. Nixon. This book should be possessed by all those who are interested in the health of the expectant and nursing mother. The recipes have been adapted for wartime restrictions. There is much useful advice on the preparation and cooking of food. The publishers are Edward Arnold and the price is 3s. 6d.

The Board of Management of the Australian War Memorial has published from Canberra a booklet entitled *Diseases in the A.I.F., 1916–18,* giving a comprehensive statement of all the non-battle casualties (so far as the records permit) which were sustained by members of the first A.I.F. on the Western Front, or which were the cause of rejection in recruits or were responsible for invaliding to Australia. This is published as a separate appendix to Vol. III of the *Official History of the Australian Army Medical Services.*

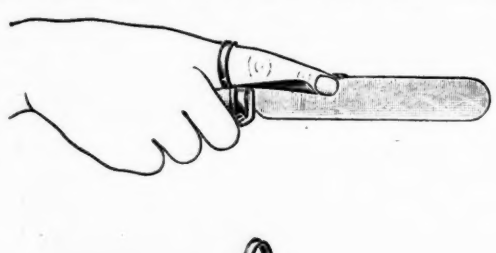
Preparations and Appliances

A TABLE-KNIFE HOLDER FOR USE BY THE PARTIALLY PARALYSED

Dr. J. CARLTON HEAL, Exeter, writes:

The table-knife holder illustrated below was designed originally for my personal use when recovering from a traumatic lesion of the left motor cortex. It is, however, of use in partial recovery from hemiplegia and nerve lesions and in advanced rheumatoid arthritis.

After damage to the motor cortex or after pyramidal lesions, when the hand has partially recovered, the simple grasp may be quite strong but the higher "movement patterns," which are developed latest, are lost (cf. Wartenberg's sign). To hold an



ordinary table knife correctly may be regarded as the "acid test" of recovery of hand and finger movements. In order to use one, the three inner fingers must be fully flexed, the index partially extended and abducted, and the thumb opposed with the proximal joint flexed and distal joint extended. Moreover, all these movements must be done very firmly.

This little gadget (the illustration of which is self-explanatory) embodies a ring through which the index finger is slipped and a trough to steady it. It is made by Messrs. Down Bros., Ltd., London, is handy and light, and is ingeniously designed to clip quickly on and off any small table knife.

NOMOGRAPH FOR BLOOD UREA CLEARANCE

Dr. M. C. Davis and Miss Mildred Barnard have devised a nomograph (published by W. Ramsay (Surgical) Publicity Ltd., Melbourne; 6d.) for determinations of blood urea clearance. There can be few laboratories in this country which perform so many clearances that this nomograph will be a real saving of time, but those using it will have the satisfaction of knowing that the proceeds from the sale of these charts are devoted to the Alfred Hospital Clinical Fund for Students.

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STAPHYLOCOCCAL PNEUMONIA COMPLICATING INFLUENZA

Staphylococcal pneumonia following influenza, though not very common, is no new thing. In the influenza pandemic of 1889, and even earlier, necrosis of the bronchi and of the alveolar walls had been observed in cases of influenzal pneumonia, and staphylococci had occasionally been cultivated from the lesions. Netter[1] found mixed infections (staphylococci and streptococci in one, staphylococci and pneumococci in the other) in two out of eight such cases complicating *la grippe* in 1889–90. Only exceptionally were staphylococci invaders of the lungs in cases of influenza in 1918; but the exceptions are striking. Thus, at Camp Jackson, Chickering and Park[2] recorded that half of 312 fatal cases cultured yielded staphylococci as the only or predominant organism. Patients dying early showed intense congestion, rupture of alveolar walls, and exudation of red cells and serum into the alveoli; those surviving longer showed innumerable abscesses in the lung. In cases at the No. 3 Canadian General Hospital,[3] where staphylococci as secondary invaders were second only to Pfeiffer's bacillus, staphylococci were cultivated in 14 out of 67 cases of influenzal pneumonia, and were grown from the heart blood in 8 cases. In Malta[4] the organism was present in large numbers in the sputum of 16 out of 18 cases, and was recovered from the lungs of 9 out of 11 patients who died. Three cases had empyema, and staphylococci were recovered from each of them. Throughout all these observations the predominant staphylococci were *Staph. aureus*. Winternitz, Wason, and McNamara[5] observed that staphylococci were more likely to be recovered from influenzal pneumonias if necrosis, abscess formation, or organization were occurring, though this tendency to purulent resolution and organization was characteristic of the epidemic, even in those cases from which no staphylococci could be grown.

The pathological picture is remarkably uniform. There is a necrotizing process in the tissues with acute exudation, haemorrhage, and oedema. The "hyaline membrane" in the bronchioles (described by many authors) appears not to be pathognomonic of either influenzal or staphylococcal infection, but a non-specific toxic effect on capillaries. Stuart-Harris, Andrewes, and Smith[6] recovered both influenza virus and *Staph. aureus* from cases of bronchiolitis during an influenzal epidemic in England in the winter of 1936–7, and regard both virus and staphylococci as important in the production of the lesion. A similar case has been reported by Stokes and Wollman.[7] Wollenman and Finland[8] have recently given an account of the post-mortem findings in 8 cases of staphylococcal pneumonia following an outbreak of influenza in Boston during the winter of 1940–1: influenza A virus was isolated and an increase of anti-influenzal antibodies was found in the serum of recovered cases of pneumonia. In the three acute cases the pleural involvement was slight. In the dependent parts of the lungs multiple abscess cavities formed a "honeycomb," mainly in communication with the bronchioles, which contained tacky muco-pus. Histologically the process was an acute necrotizing bronchitis and bronchiolitis with spread to the associated alveoli; no hyaline membrane was seen, save in the single fulminating case, in which there was haemorrhagic oedema with little reaction. In the four chronic cases pleural involvement was also slight; the basal portions of the lungs contained numerous "rubbery" nodules, consisting of large cavities containing yellow or greenish-grey muco-pus, and with well-marked fibrous walls. There was extensive fibrosis between the cavities, and the trachea, bronchi, and bronchioles contained grey-green tenacious exudate, the removal of which revealed reddened but apparently intact mucosa. Microscopically the picture was one of multiple abscesses, fibrosis, and bronchiectasis. The bronchial walls were infiltrated with plasma cells, lymphocytes, histiocytes, and rare foreign-body giant cells; in the abscess cavities the process was more acute, with some persistence of necrotization. In three cases there was interstitial fibrosis and the alveolar lining was replaced by a low cuboidal epithelium. There was evidence of regeneration of bronchial mucosa, and in some the regenerating epithelium was found pinched off as isolated epithelial islets. In the alveoli the inflammatory exudate showed all stages of organization; large sheets of connective tissue extended from one alveolus to the other through septal defects. In areas of marked fibrosis and chronic inflammation there was some proliferative endarteritis. Staphylococci could be seen in sections of all the acute cases, and were recovered as the predominant organism in all eight. The authors therefore suggest from their own experience and from a consideration of the literature that *Staph. aureus* may become in influenza epidemics a dangerous secondary invader of the lungs. Until penicillin is generally available the clinician will have to rely upon sulphathiazole as a chemotherapeutic weapon against this dangerous complication. Sulphathiazole should be given in effective doses—for example, 12 grammes on each of the first two days. If the clinical condition is bad, then sodium sulphathiazole should be given intravenously.

1 *Arch. med.-exper. Anat. Path.*, 1892, **4**, 28.
2 *J. Amer. med. Ass.*, 1919, **72**, 617.
3 Tytler, W. H., Janes, R. M., and Dobbin, G. M., M.R.C. Spec. Rep. Series No. 36, p. 77, London, 1919.
4 Patrick, A., *Lancet*, 1919, **1**, 137.
5 *The Pathology of Influenza*, Yale University Press, 1920.
6 M.R.C. Spec. Rep. Series No. 228, London, 1938.
7 *Internat. Clin.*, 1940, **1**, 115.
8 *Amer. J. Path.*, 1943, **19**, 23.

THIOURACIL IN HYPERTHYROIDISM

Thiouracil is an important weapon for the control of hyperthyroidism. By the oral administration of thiouracil the symptoms of thyrotoxicosis can be greatly reduced in two or three weeks and they will remain in abeyance so long as the administration continues. The story of the discovery of thiouracil begins with experiments on sulpha-

guanidine by J. B. MacKenzie, C. G. MacKenzie, and E. V. McCollum,[1] who wished to see whether, in killing intestinal bacteria, sulphaguanidine would prevent the formation of essential nutrients by the intestinal flora. They observed that it affected the thyroid of the rat so that it became enlarged and hyperaemic, and, on microscopical examination, hyperplastic and colloid-free. About the same time Richter and Clisby[2] observed that similar changes in the thyroid followed the administration of phenyl thiocarbamide, and Kennedy,[3] who was attempting to isolate the substance in rape seed which caused goitre, found that allyl thiourea caused thyroid enlargement in rats and changes in the anterior pituitary.

The MacKenzies' first detailed paper[4] describes the effects already mentioned and also demonstrates that daily consumption of sulphaguanidine causes cellular changes in the anterior pituitary, together with a fall in the basal metabolic rate. In the anterior pituitary the eosinophil cells decrease in number and the basophil cells are vacuolated and enlarged. The simultaneous administration of sodium iodide does not prevent these changes, but that of thyroxine does. While the MacKenzies thus made the original observations, the further development of the subject and the clinical application of thiouracil have been due to E. B. Astwood and his colleagues in the department of pharmacology at Harvard. In their first paper,[5] which appeared side by side with that of the MacKenzies, they confirm the MacKenzies' conclusions and show that sulphaguanidine does not cause thyroid enlargement in hypophysectomized animals. Astwood *et al.* put forward the explanation that under the influence of sulphaguanidine or thiourea the organism is unable to synthesize the thyroid hormone at a normal rate, so that a deficiency of this arises. Because of this deficiency the anterior pituitary secretes more thyrotrophic hormone, and this hormone causes thyroid enlargement and hyperplasia. Astwood[6] then made a study of 106 compounds to determine their relative activity in causing thyroid hyperplasia, and also to determine their toxicity. He found that the sulphonamides were all active, sulphadiazine causing hyperplasia in the very low dose of 4.2 mg. per 100 g. body weight daily; sulphanilamide, on the other hand, acted only in a dose of 70 mg. per 100 g. Other potent substances were *p*-aminobenzoic acid, potassium thiocyanate, and many derivatives of thiourea, of which thiouracil—which is NH.CS.NH.CO.CH : CH—and thiobarbituric acid were the most important. Because of their low toxicity, Astwood concluded that thiourea and thiouracil were the most suitable for clinical trial.

The hypothesis put forward concerning the action of these compounds by Astwood *et al.*[5] was supported by the observations of Dempsey and Astwood[7] on the effect of temperature. They found that if rats were kept at 35° C. thiouracil had almost no effect in causing thyroid hyperplasia. On the other hand, if rats were kept at 5° C. thiouracil had much more effect than if the rats were kept at room temperature. The observations fitted in with the conception that the hyperplasia was not the direct effect of the thiouracil on the thyroid gland, but was the consequence of the stimulation of the anterior lobe of the pituitary body by the lack of thyroid hormone. The lack of thyroid hormone is a much more effective stimulus at low temperature. Dempsey and Astwood also showed that when thyroxine was given together with thiouracil, at room temperature, doses of thyroxine less than 5.2 microgrammes daily did not prevent thyroid hyperplasia, whereas doses greater than this not only prevented hyperplasia but actually led to diminution in the size of the gland. Evidently these doses were greater than the normal thyroxine production, and diminished the activity of the pituitary anterior lobe. By finding the daily dose of thyroxine which at any given temperature maintained the weight of the thyroid gland unchanged when thiouracil was being administered they were able to calculate the normal daily thyroxine production of the gland at that temperature.

In May of this year Astwood[8] described the effect of thiourea and thiouracil on patients with thyrotoxicosis. Since he found that thiourea produced nausea and gave the patient's breath an unpleasant smell he gave up its use in favour of that of thiouracil. He found that both thiourea and thiouracil caused a fall in the basal metabolic rate provided they were administered for 3 weeks or longer; there was a corresponding fall in pulse rate and rise in body weight and in serum cholesterol (e.g., from 84 to 206 mg. per 100 c.cm.). When the thiouracil was discontinued the B.M.R. again rose. The dosage of thiourea was 1 to 2 g. daily, and that of thiouracil 0.2 to 1 g. daily. In one patient an unnecessarily high dose of thiouracil, 2 g. daily, produced agranulocytosis, but the patient recovered. The initial dose recommended is 0.5 g. daily, to be lowered as the B.M.R. falls.

These clinical results of Astwood's have been confirmed in America by Williams and Bissell,[9] and recently in England by Himsworth,[10] so there remains no doubt that the introduction of thiouracil represents an important step in the treatment of thyrotoxicosis. It is strange that a substance which causes thyroid hyperplasia in a normal animal should be used to inhibit the effects of hyperplasia in thyrotoxicosis. However, both in the normal animal and in thyrotoxicosis thiouracil prevents the formation of thyroid hormone. In the normal animal the diminution in thyroid hormone leads to pituitary stimulation and thyroid hyperplasia. In thyrotoxicosis the diminution in thyroid hormone leads to a fall in the B.M.R. and an amelioration of the patient's symptoms. Probably in thyrotoxicosis the thyroid hyperplasia will not be seen because thiouracil is given in a dose sufficient only to reduce the B.M.R. to normal. The longest period for which Astwood has given thiouracil to a patient is ten months (that was two months ago); administration for this time produced no ill effects. When in another patient administration was discontinued after two months the B.M.R. returned to the previous high level, which

[1] *Science*, 1941, **94**, 518.
[2] *Proc. Soc. exp. Biol.* N.Y., 1941, **48**, 684.
[3] *Nature*, 1942, **150**, 233.
[4] *Endocrinology*, 1943, **32**, 185.
[5] Ibid., 1943, **32**, 210.
[6] *J. Pharmacol. exp. Therap.*, 1943, **78**, 79.
[7] *Endocrinology*, 1943, **32**, 509.
[8] *J. Amer. med. Ass.* 1943, **122**, 78.
[9] *Science*, 1943, **98**, 156.
[10] *Lancet*, 1943, **2**, 465.

suggests that continued administration is necessary to control hyperthyroidism. At present the treatment is being used in Massachusetts General Hospital, and doubtless other hospitals, as a preliminary to surgical intervention but not as a substitute for it: time will show whether thiouracil will replace the surgeon's knife in the treatment of hyperthyroidism.

VIEWS ON A MENTAL HEALTH SERVICE

The Royal Medico-Psychological Association has issued a series of recommendations setting forth its views on a mental health service. It is in favour of regionalization, and recommends that a Mental Health Committee be set up in each area to take over all mental health activities, with a Medical Advisory Committee "fully representative of those practising psychiatry in the area." An administrative medical officer of mental health of equal status with the medical officer of health is also recommended. The association is uncompromising in its assertion that the medical superintendent of each mental hospital should continue to be in absolute charge of his institution. The idea of a dual authority consisting of an administrator on one hand and medical director on the other is ruled out. Any possibility of an organization similar to that obtaining in the general teaching hospitals is not mentioned; nor is anything said in the recommendations as to the responsibilities of superintendents with regard to the postgraduate teaching of the staffs. But it is impossible in a short statement of main principles to cover all the ground. The report recognizes the need for psychiatric beds in each general hospital and suggests 6% of the total bed accommodation as desirable. While emphasizing the need for mental nurses to staff these clinics—or "units," as the report prefers to call them—it does not allude to the possible affiliation of mental with general nursing, and presumably therefore, by implication, is not in favour of a unitary scheme. The report does not commit itself on the question of the allocation of types of patients between the psychiatric unit or clinic and the mental hospital. Apparently it is felt that each is suitable for the treatment of all types. There is probably room for variety based on local experience on this score, especially as in the course of time the increased intercourse between the staffs of mental hospitals and psychiatrists outside them will tend to ensure that the individual patient goes to the place that is actually most suitable for him at the time. The report recognizes the existence of psychiatric consultants other than those on the staffs of mental hospitals and psychiatric units, but it does not suggest any machinery by which they might be recognized.

One of the most important recommendations made by the association is that certification in the form of a reception order should be abolished for non-voluntary first admissions for at least six months. This recommendation is made in conjunction with the suggestion of increased powers for the Board of Control reorganized and renamed as the "Board of Mental Health." While in fact the report envisages increased liberty for the patient and increased facilities for treatment it also implies an increase of regimentation in the ranks of medical men in a mental health service. Important recommendations are made for increase in the provision for the care and education of dull and defective children. A special note is made on the need for hostels and the like for the care and treatment of difficult children. "Child psychiatry" is included under a separate heading, but presumably it is not intended that a children's psychiatric service and one catering for the subnormal children should be separate and distinct. In general the report provides a comprehensive basis for discussion.

CHILDREN IN HOSPITAL

The belief that illness is caused by malign agency is deep-rooted in the history of the world. In England, not so long ago, witches were burnt for this reason, while to-day among primitive peoples there are many who still look upon disease either as the hostile act of an ill-wisher or as a punishment for sin. In children something of the same feeling exists as in these child-races. Piaget has noted that the conception of chance is absent from the mind of the young child, who interprets what happens to him in terms of the omnipotent parents of his fantasy. So in the case of bodily disorder he feels as if his parents are letting him be ill to punish him for angry, hostile impulses, whose importance he exaggerates, and for which, if he is sent to hospital, he feels cast out. Where parental visits are forbidden, their absence serves strongly to reinforce his sense of loss and guilt. In a series of 44 cases Dr. H. Edelston[1] has traced the onset of neurotic disorders following stay in hospital. Symptoms include night terrors, sleep-walking, fears, abnormal clinging to the mother, facial twitches, soiling, and behaviour difficulties. In each case it was found that the twin traumata of illness and loss of parents had struck at the roots of the child's love-relationships upon which his sense of security was based, for he could no longer feel sure that his parents' love would protect him from harm, or that they would not reject him (as it seemed) in his hour of need. The younger the child the more acute these anxieties, except where frequent visits had been permitted. Although obviously there are many children for whom a period in hospital is not an emotionally traumatic experience, the fact that this can be so may shake the complacency with which medical and nursing staffs are wont to regard the Tommies and Topsies of the children's ward, and to assume that the disturbing influences of father and mother are better excluded. Certainly they can be disturbing, because a child who fears he is rejected may on the one hand test his mother's love by difficult behaviour when she appears, and on the other hand be distressed at again losing her when she leaves. These reactions are but eruptions discharging on the surface which serve to prevent the malady from becoming deep-seated. Better a half-hour of uproar or a passing rise of temperature after visiting hours than a future of neurosis!

ARSINE POISONING

The haemolytic effect of arsine (AsH_3), sometimes causing death by acute and extensive destruction of red blood cells, has long been known. Many such industrial accidents, especially in the course of processes involving extraction of ores contaminated with arsenic, have been reported, and where necropsy has been performed the "haemolytic syndrome" has been found to be associated with engorgement and blocking of the tubular system of the kidneys. The problem of the mechanism of the haemolytic action of arsenic has recently had much light thrown upon it by the investigation[2] of three cases of acute haemolytic anaemia, one fatal, occurring in workers in the fertilizer industry. Their occupation—that of unloading from the

[1] *Genetic Psychology Monographs*, 1943, 28. Provincetown, Massachusetts, U.S.A.
[2] Wilson, R., and Maugun, G. H., *Southern med. J.*, 1943, **36**, 212.

hold of a wooden schooner fish-scrap used as a source of ammonia nitrogen—did not at first suggest exposure to arsine. The evidence for such exposure, since arsine was not demonstrated in the air of the ship's hold, rested chiefly on the facts that arsenic is present in fish-scrap, that the atmospheric and bacterial conditions in the ill-ventilated hold would tend to favour development of arsine, and that all three workers, with the same immediate occupational history, developed the same haemolytic syndrome. The active haemolysin was demonstrated by a technique of precipitation with ammonium sulphate, re-solution and dialysis, in the protein fraction of the blood in one case and the urine in another. In the blood it was present only in the case in which tests were carried out immediately after exposure to arsine. The haemolysin found in the urine, though the urine itself contained large amounts of arsenic, was entirely free from arsenic. It is suggested therefore that arsenic, after absorption through the lungs, enters into some loose chemical combination with protein in the serum or in the red blood corpuscles, this combination conferring on the protein an active haemolytic property independent of the presence of arsenic itself. In the early stages of the intoxication the haemolysin is present in the blood and is later excreted in the urine. In the fatal case—in which by mistake the administration of alkali was omitted—death took place from clinical uraemia, and examination of the kidneys showed blocking of the collecting tubules by haemoglobin casts. Two necessary measures for prevention of similar fatalities emerge from this investigation: first, the adequate ventilation of ships' holds where fish-scrap is unloaded; secondly, the administration of alkalis in cases of acute haemolytic anaemia in order to minimize the precipitation of haemoglobin in the tubules of the kidneys.

FRIENDS IN NEED

To turn over the pages of the fourth annual report of the Friends' Ambulance Unit is to turn over the pages of a gazetteer—Norway, Egypt, Greece, the Middle East, Syria, Ethiopia, India, China, and now North Africa, Sicily, and Italy—evidence that this body of some 800 men and women who, though unable to reconcile their beliefs with war, nevertheless "go wherever the need is greatest to give disinterested service in the relief of suffering." During the past year thirty-seven members of the unit have provided about a third of the personnel of a mobile military hospital in the Middle East, which has served as an evacuation centre, a forward casualty clearing station, an emergency hospital, and a clearing base for all the seriously wounded. This hospital worked in the desert without pause from November, 1942, to June, 1943, from Cairo to Tunis. Members of the F.A.U. were at hand in India at the time of the devastating Bengal floods in October, 1942, to help with inoculations, nursing of cholera cases, and the distribution of food. Again, in the autumn of 1943 the unit organized canteens in the Bengal famine, and was responsible for distributing powdered milk to 20,000 people in Calcutta and district. While the work of the F.A.U. increases abroad, Quakers at home have turned their attention to the possibilities of relief on the Continent of Europe. Six members who were captured in Greece were among the repatriated prisoners reaching home last October; the remaining ten continue to work as masseurs and orderlies in prisoner-of-war camps and hospitals in Germany. Members of the unit are unpaid, receiving only their keep, equipment, and small allowances towards the necessities of life. About one-half of the unit's total expenditure is now met by contributions from those for whom it works; the remainder must come from subscriptions and donations, and an appeal is made from 4, Gordon Square, W.C.1, for £30,000 to see the unit through the financial year 1943–4.

WAR ON THE BROWN RAT

The beginning of December saw the outbreak of another war, in which the enemy was the brown rat (*Mus norvegicus*), the inhabitant of London sewers. It is estimated that the rat damages national food stocks to the extent of 2,000,000 tons a year, equal to the carrying capacity of many cargo ships. Therefore the Ministry of Food, in co-operation with the Ministry of Agriculture, is taking the lead in its extermination; but the campaign has an interest from the public health point of view, because the rat is a disseminator of disease, particularly, in the case of the brown rat, of spirochaetal jaundice affecting sewermen and miners who come in contact with its excreta or with stagnant water which it has fouled. Since October 14,000 reports have been received by the Ministry of Food from members of the public in London and the Home Counties furnishing evidence of the whereabouts of rats, and by piecing together the reports from a particular area a fairly good map of rat territory is obtained. Observation of smears, droppings, and damage locates more closely the whereabouts of the colonies. The first stages of the campaign are directed to the 3,000 miles of London sewers. The sewer rat and the surface rat are closely allied, and it has been shown that if the former is dealt with adequately the surface rat population is depleted. Almost invariably the territories in which the sewer rat is reported are the areas also of surface infestation. To assist in rat control the Ministry of Food is employing 16 young women trained in its Disinfestation Division in Gower Street, who give lectures to rodent officers, sanitary officials, and others who will have the work in hand. The measures taken for the extermination of rats once their presence is known are the result of the experimental work carried out by the Bureau of Animal Population at Oxford under the auspices of the Agricultural Research Council, and have been already employed successfully in the docks and warehouses of the Port of London. An attractive unpoisoned bait of whole wheat or waste bread soaked in water is built up, and after a few days is replaced by a poisoned bait. Red squill is the most effective poison, but is difficult to obtain now in large enough quantities. The poisons used are zinc phosphide, which is mixed with the moist bait in the proportion of 5% by weight, finely powdered arsenious oxide, in the proportion of 15%, or barium carbonate, 20%, this last mixed intimately with sausage rusk or bread mash. Most of the rats die in their runs, but when zinc phosphide is used a number may be found lying out in the open. To ascertain whether any rats remain, a system of post-baiting is recommended, using an unpoisoned—and a different—bait. All care must, of course, be taken to prevent the poisons from becoming mixed up with the foodstuffs or from being left in places to which children or domestic animals have access. The rat-catcher's chief responsibility begins after the "kill," when it is his business to dispose of the waste poison baits as well as of such rat corpses as can be found. A rat campaign is very like war in that, if it is to be waged at all, it must be waged rigorously. As Dr. M. T. Morgan, medical officer of health, Port of London, points out in an article in the *Monthly Bulletin* of the Ministry of Health, much money and energy are wasted on enterprises claiming rodent elimination which do no more than touch the surface of the rat population, while the more shy or more cunning survivors continue their depredations and maintain or increase their numbers. The aim must be the total elimination of the rat colony.

PHOTOMICROGRAPHY WITH ORDINARY CAMERAS—A SIMPLE TECHNIQUE

BY

W. N. LEAK, M.A., M.D.

The description of a little-known method which enables anyone who knows how to use his microscope to obtain photomicrographs—which will compare reasonably with the work of elaborate equipment—ought to be of more general interest now than in peacetime, as so many doctors are working in unusual circumstances. The basis of the method depends on the fact that a camera will take a photograph of a "virtual" image—e.g., a reflection in a mirror—as easily as it will that of a "real" one. The image seen in the eyepiece of a microscope is a virtual one, and the results which can be obtained by the method described depend largely on the fact that practically all microscopes work best when the image is viewed in this way. It is relatively seldom that they are so used even in the most expensive photomicrographic equipments; even the projection oculars are to some extent a makeshift, though much better than the ordinary Huygenian type occasionally used as such. The microscope objective is so constructed that it gives its finest optical results when used with a definite tube-length and the image turned into a virtual one by the eyepiece,

Trichinella spiralis encysted in infected pork.
(Low power—1 in.; × 100 approx.)

and the virtual image thus formed is focused at infinity—i.e., as seen by an emmetropic eye completely relaxed. This is the normal and ideal position, though a person with hypermetropia or myopia will naturally focus the image at the most comfortable distance for himself.

In this ideal position clearly the conditions required for photographing this virtual image focused at infinity are that the camera itself should be focused at infinity, the lens put in such a position that all the light coming through the eyepiece enters the lens, and the camera itself put truly in line with the microscope tube. The only thing left is to make the correct exposure and develop the film or plate. For all that it is so simple—literally simple owing to the excellence of present-day microscopes, cameras, and films—a few remarks on the various points mentioned may prove helpful.

Focusing at Infinity

The first point is to ensure that the virtual image is correctly focused at infinity. The simplest way of doing this is to construct a small viewing telescope of low power with which to view the image. This is easily done by sticking a small magnifying-glass of about 4-in. focus—non-achromatism does not matter—at the end of a short tube of cardboard, etc., and sliding into the other end a spare eyepiece from the microscope. This should then be focused on some distant object and its focus for infinity thus fixed. If this gadget is then put in front of the eyepiece a small part of the image will be seen through it correctly focused. If the image is somewhat blurred a touch on the fine adjustment will bring it into correct focus. Once it has been found, as it may, that the operator's eye is emmetropic and no adjustment of the fine adjustment is needed, it is not necessary to repeat this manœuvre every time unless lighting conditions are trying or one is doing a great deal of close work. In these conditions the focus of the eye is liable to alter sufficiently to make some slight correction necessary, though I personally have not found the need for it. If, on the other hand, the operator is myopic and wants to take a number of photographs one after the other, a simpler way is to focus the viewing gadget to show a sharp image with the microscope focused as the operator normally uses it, and then turn the gadget on to some object in the room which shows in sharp focus, and measure its distance from the gadget itself. This will give the correct distance of the virtual image, and if the camera is focused for this distance the resulting photographs will be sharp without further adjustment of the microscope focusing.

Position of Camera Lens

The next point is to see that all the light coming through the eyepiece enters the camera lens. In order to do this it is important that the camera lens should be close to the eyepiece and the lens diaphragm opened as wide as possible. Closing the diaphragm will not increase the sharpness of the picture; it will merely limit the field of view. One might mention here that, though reference has been made throughout to a microscope, the method is just as applicable to any other optical instrument using an eyepiece which gives a virtual image—such as a telescope, spectroscope, range-finder, or even a field-glass, through which, with care, excellent telephotographs can be taken. Care should naturally be taken that there is no dust on either eyepiece or lens to scatter the light and so cause unwanted fog. For this reason, also, the simple triplet type of anastigmat—such as the Zeiss Tessar, the Leitz Elmar, and the Aldis—is probably the best, as with this type unwanted reflections and flare spots are less likely to occur. However, nearly any type of anastigmat will serve, as well as any type of camera. The focal length of the lens is of some importance: the longer the focal length the larger the resulting photographs, the less the need for enlargement, the larger the plate or film required, and—a very great disadvantage—the longer the exposure needed.

Placing the camera so that it is truly in line with the microscope tube is not a difficult matter. It can be gauged by the eye accurately enough for all purposes, and with the tube horizontal one can in a minute or so make up a pile of books of the right height, get the camera out of its case and place it firmly on them, and take the photograph. If the tube is to be kept vertical some sort of stand for the camera must of course be used, and once this is fixed, or a block of wood made the right height for the horizontal tube, the operation is even simpler still. It is wise, though not always necessary, to put a cloth or collar round the junction of the eyepiece and the lens to exclude extraneous light, and unless a wire release is used it is best to make the exposure by putting a card between the illuminant and the microscope stage, open the shutter, and then, when everything has settled down again, give the exposure by removing the card for the time required, closing the shutter after the card has been replaced or, alternatively, switching the electric illuminant on and off—that is, unless a slow instantaneous exposure is required.

Exposure and Development

Judging the exposure is not very difficult after a few trials. Most modern films will give a reasonably good print if not over-exposed more than about five or even ten times; so if one is in doubt and is using a miniature camera with its cheap film, it is best to give two exposures—one perhaps a third what one estimates, and the other about ten times as long. One or other of these exposures should give a nearly perfect result. Where exposure needs to be exact is when photographing unstained objects such as diatoms. Using a 2-in. lens, one may say roughly that if with artificial illumination the image is uncomfortably bright and gives a feeling of glare, a fast film such as Selo H.P.2 will require about 1/10 second,

a slow film such as F.P.2 needing five times as much. Using daylight as an illuminant is a more tricky matter even with the help of an exposure-meter. Naturally, a panchromatic film should be used, and the best illuminant is an opal—not pearl—electric bulb of about 40 watts. Except for the lowest powers the illuminant should be correctly focused on the slide by a substage condenser, and those who have not used one will be surprised by the improved definition obtained when an achromatic condenser is employed instead of the ordinary Abbé. One advantage of this type is that with the top lens removed it usually makes an achromatic condenser of longer focus admirably suited to work with a 1/6-in. or lower power. When out of reach of electric light the side of an oil-lamp flame, correctly focused, is probably still the finest illuminant possible, and, as shake here is unlikely, the longer exposures required are not of much consequence.

The only point requiring special notice as regards development is the degree of contrast desired. In this case it is not a question of obtaining an artistic print but one which will show clearly the structures involved. Until ciné colour film becomes available once more we have to differentiate in a photograph by the use of contrast instead of colour-staining. Therefore films should usually be well developed to give as wide a contrast as possible without, however, in the case of miniature cameras, going so far as to increase grain size. We must use panchromatic film, which reproduces the brighter colours very much alike, and for this reason the use of colour-filters to bring out contrast is most desirable. For difficult work the skill of the photographer will be shown by his judicious use of these more than by anything else. Fortunately the filters do not need to be optically worked like those used on cameras, as they should be placed between the illuminant and the condenser. An opal bulb gives rather a reddish light, so the factors for blue filters will be decidedly more than they would be for half-watt lighting, and very much more than for daylight.

Conclusion

Many variants and developments of the general idea given here can be worked out. The owner of a twin-lens reflex, for example, may prefer to focus the image through the top lens before taking the photograph through the lower one. The fortunate owner of some high-power binocular microscopes might like to set his camera semi-permanently over one of the eyepieces, viewing down the other and snapping as often as he pleases. In the same way serial views through the thickness of a section or animal may be taken with the utmost economy of time and material by just moving the fine adjustment a definite amount on each occasion; and views, say, of the disposition of chromosomes in three dimensions or of the internal organs of an insect obtained in a very short time. When peace comes, students, who are often keen photographers, may by this means be helped to take a greater interest in many of their pathological and other slides by photographing them. In fact, the possibilities are as endless as the uses of optical instruments themselves; and even though the result may not invariably be first-class they should always be presentable and certainly full of interest.

The accompanying photograph, taken with a miniature camera, will give an impression of the work which can easily be done.

BIRMINGHAM HONORARY STAFF

In the latest annual report of the Birmingham United Hospital (which includes the General Hospital, founded in 1766, and the new Queen Elizabeth Hospital at Edgbaston, founded in 1938) the Board pays a grateful tribute to its honorary medical and surgical officers, upon whom heavy burdens have fallen. They are discharging important duties under the Ministry of Health, requiring frequent visits to many outlying hospitals, and yet they have continued to serve the United Hospital unsparingly. It is mentioned that as a body, speaking through the Medical Committee, which is composed solely of members of the staff, they have consistently refused to accept any portion of the funds derived from contributory schemes. From time to time there has been set aside a small percentage—at present 1%—of maintenance fees paid by the ordinary non-contributory patients. The small sums so accumulated have been applied by the Medical Committee in furtherance of the interests of the hospital. Officers who have been marked out for staff appointments have received financial help in undertaking postgraduate studies in important medical centres in Europe and America, and in addition new scientific equipment has been bought for the hospital from this fund. It is stated to be the desire of the staff that the question of adequate payment for services rendered shall remain in abeyance until such time as the Royal Colleges of Physicians and of Surgeons or the British Medical Association have expressed their views, and proposals have been put forward which would operate on a national, or at least a regional, basis.

The honorary medical and surgical staff of the Birmingham United Hospital numbers 36, and in addition there are 15 honorary consultants. The normal capacity of Queen Elizabeth Hospital of 516 beds has been temporarily increased, and the average occupation during the year covered by the report was 592. At the General Hospital, working within a limit of 160 beds, 6,240 in-patients were admitted during the year. The comparable figure for the last pre-war year, when three times as many beds were available, was just upon 8,000, so that more than three-quarters of the number of patients have been treated in one-third of the beds—meaning a quicker turnover and the use of the hospital only for the acute stages of illness, with consequent heavier work for the nursing staff, to whom also a tribute is paid for its "admirable spirit of cheerful service."

UNCOUNTED LONDON

For the first time in its history it is not possible to state the population of London. The London citizen may from the superficial aspect of its streets conclude that it is more crowded than ever, but the statistician is silent on the subject, saying only that the population is much smaller than before the war. The absence of this governing figure takes away much of the value of the statistics which are given in the report of the County Medical Officer of Health for 1942.[1] We are told, for example, that the deaths of Londoners during that year were 7,500 fewer than during the year before, and the births 7,000 more, but the rates per 1,000 of population cannot be given. The picture of the infectious diseases incidence is a little more clear, since the heaviest incidence is among children, and it is known that the child population has increased. The number of elementary school children went up by 72,000 during 1942, and that fact must be borne in mind, otherwise an increase of nearly 9,000 in the number of notifications of measles and of 2,000 in those of scarlet fever would be misinterpreted. In general, the pattern of the health of London repeats that of the whole country. Deaths from influenza, rheumatic fever, pneumonia, and infectious diseases showed a gratifying decline. Infant mortality fell to 50 per 1,000 births, although that figure is above the record low rate in 1939 of 47. The rate of maternal mortality fell to 2.51, but in 1939 it was 1.97. It is worthy of note that of the 40,000 births in London, 12,000 took place in the Council's hospitals, and 11,000 others were attended by midwives under the Council's domiciliary scheme. Figures are never quite what they seem, and their deceptiveness is increased in the confusions of war. From a superficial study of the figures for attendances at the venereal diseases clinics in London one would suppose that venereal diseases were declining. The total of new cases in males seen at the clinics in 1942 was just half of what it was in 1938, but the clinics deal mainly with civilians who, at the younger ages, 18 to 30, are not nearly so numerous in London, especially the men, as in pre-war years. Another factor to be borne in mind is the success of the drug treatment of gonorrhoea, which means that many patients who formerly attended the public clinics are now treated by private practitioners. "There is little doubt," says Dr. Allen Daley in his report, "that in each sex the incidence rate is increasing." The school medical service of London assumed a more normal shape during the fourth year of war with an elementary school population increasing from 148,000 at the beginning of 1942 to 220,000 at its close. An examination of 88,000 children in the four age groups (that is, on entering school, at 7, at 11, and at 13 plus) was carried out, and unsatisfactory nutrition was discovered in 6.2%, being almost the same proportion (6.6%) as in 1938, when the examination covered twice the number of children. That the nutritional condition of the great majority is satisfactory is attested by some independent observers, among others by Dr. Sydenstricker, an American authority on deficiency diseases, who, at the request of the Ministry of Health, made a sample examination. In the examination of the 88,000

[1] *London County Council. Interim Report of the County Medical Officer of Health and School Medical Officer for the Year 1942.* (6d., post free 7d.)

children obvious decay of the teeth was found in 36% and defective vision (6/9 or worse) in nearly 24%. There was a welcome improvement in the cleanliness of the hair and also in the incidence of skin diseases, which was only 2%. Finally, the mental health services are the subject of a short section of the report. The number of mental patients in London continues to fall. At the end of 1942 the inmates of mental hospitals and institutions for mental defectives totalled 31,400, being 3,000 fewer than at the outbreak of war. The same decrease was noted in the last war, and it is not limited to London. Possibly, with full employment and lessened economic stringency for many individuals and families, many mental breakdowns are averted.

SOCIAL MEDICINE IN SCOTLAND

The Englishman may well have begun to wonder why Scotland has been able to initiate a number of experiments in social medicine since war began, and the Department of Health, in the opening pages of a pamphlet describing these experiments,[1] acknowledges that the accommodation available in E.M.S. hospitals has made much of the work possible. The Clyde Basin experiment, for example—remarkable because it is directed to maintaining the health and efficiency of young civilian workers—was made practicable because beds were available at two base hospitals—Law and Killearn—in addition to convalescent-home accommodation. The patients are referred for overhaul by their own doctors, and are examined by consultants where necessary; if further examination is required they are admitted to E.M.S. hospitals, or they may be sent for convalescence to one of the auxiliary hospitals. In one year 1,400 young people were dealt with under the scheme, and by the end of June, 1943, that number had risen to 4,126. A detailed analysis of the first 1,200 cases shows that some 40% were admitted to hospital for investigation and 14% sent to convalescent homes. The great majority of those patients suffered not from serious organic disease but rather from vague ill-health of the nature of debility, anaemia, and anxiety states, the result of continued strain. The Department concludes from a general review of the working of the scheme that:

"(1) There is need for facilities such as are provided under the scheme, though not necessarily on exactly the present lines—admittedly experimental. (2) At present too many of the cases of fatigue carry on until unfit for work, when the period required for return of capacity is prolonged; more adequate facilities for ordinary—e.g., week-end—rest and recreation would help to prevent some of the conditions found. (3) Much of the vague ill-health encountered was due to long hours of work, travelling difficulties, and inappropriate dietaries as evidenced by the large proportion of cases without serious organic disease. (4) The vast majority of the patients sent for convalescence have benefited by the rest and change provided; the removal of fears of serious disease by complete medical overhaul provides the reassurance so helpful in expediting recovery. (5) The hospital reports must be of value in affording to the patient's own doctor a useful background not only for present but for future reference. (6) The proportion of cases with early organic disease elicited in the course of hospital investigation but not detected by ordinary clinic and specialist facilities is small; where institutional admission can be most helpful in such cases is mainly in the elucidation of causal factors."

Among other work described in the pamphlet is a study of the health and working experience of men and women invalided from the Forces. It was found that 65% of the men received attention from their own doctors and 16% hospital care for the condition responsible for their discharge within 6 months of returning to civil life. Six months after leaving the Services 16.5% were unemployed, 40% were doing their old work, and 43.5% had taken up new work; 39% reported they were having difficulties, and the nature of those difficulties showed how intimately related were their medical, social, and occupational aspects. An investigation into long-term incapacity for work, the steps taken to reduce waiting lists of voluntary hospitals, and the Gleneagles Fitness Centre are also described in the booklet. Of the last named the Department says it is as yet too early to assess its value, but from the enthusiasm of the patients and their co-operation it is obvious that the centre meets a real need.

[1] *Health and Industrial Efficiency: Scottish Experiments in Social Medicine*, H.M. Stationery Office. 1943. (1s.)

THE RENEWAL OF CIVILIZATION

PROBLEMS OF FEEDING EUROPE

It is hardly to be wondered at if, after four years of international violence, any sign of the reversing of the engines is regarded with scepticism. The Atlantic Charter evoked hope and cynicism in about equal parts, and now the plans which are being constructed by the United Nations for the relief and rehabilitation of the victims of war attract less interest than some minor episode of the fighting. Yet there will come a time, soon or late, when those plans will be the topic of general conversation; they will seem as paramount as the prosecution of the war seems now, and eighty millions of our nat onal income will probably be spent upon their furtherance.

At Washington early in November forty-four nations signed a draft agreement for a Relief and Rehabilitation Administration. They are called the United Nations, but, strictly speaking, the United Nations number thirty-three; there are ten others, chiefly Central and South American States, associated with the United Nations in the war, and there is the French Committee of National Liberation, making the forty-four. The purpose of the Administration is to meet the basic needs of the victims of war in the territories controlled by the signatories, including the areas liberated from the enemy. The preamble of the agreement ordains that immediately upon the liberation of any area the population shall receive aid and relief in the shape of food, clothing, shelter, and measures for the prevention of pestilence and recovery of health. At the conference which has taken place lately at Atlantic City, Dr. T. H. Parran, Surgeon-General of the U.S. Public Health Service, stated that reports from France and Poland in particular indicate the need for swift moves to counter the spread of epidemics, especially of typhus and tuberculosis. As many as 21,000,000 people will, in his computation, be returning to their homes. He stated that teams of physicians and technicians, each team capable of dealing with a group of 10,000 persons, were being organized and medical supplies accumulated. The returning people will be passed through centres where they will be examined for contagious diseases and will be vaccinated and, if necessary, put in quarantine.

A council, representative of the principal Governments, is created by the agreement, with power to establish general policies. It will receive reports and recommendations from standing committees, including one for Europe and another for the Far East, and there will be a central body composed of representatives of the United States, Great Britain, Soviet Russia, and China for emergency decisions. The agreement is an instrument of ten articles, one of which deals with the appointment of a Director-General, who will have power to carry out relief policies. The American Secretary of State, Mr. Stettinius, says that in the course of the negotiations he has learnt the great importance which all the united and associated nations attach to this project and their eagerness to make the utmost possible contribution. It will certainly all be needed if any halt is to be called to the spectres of famine and plague which not only accompany war but follow for long in its wake. It is to be hoped that this instrument will be more effective than the League of Nations Covenant, the penultimate article of which called upon the members of the League to encourage and promote the improvement of health, the prevention of disease, and the mitigation of suffering throughout the world.

Famine Conditions in Belgium

Meanwhile the Famine Relief Committee in London has issued, above the signature of Lord Horder, its chairman, a report on conditions in Belgium, from which, of all the famine countries, the evidence is most complete. The calorie value of the official basic ration in Belgium per day is 1,280, less than half of that required for health, and about half of that which obtained during the last war, when Belgium also was an occupied country. Infants and workers receive a supplementary ration, but large sections of the population have to depend upon the basic figure. Lord Selborne, Minister of Economic Warfare, has questioned these figures, but he admits that large groups of the population receive an average daily allowance no greater than 1,550 calories. One of the most striking evidences of dangerous undernutrition is the occurrence

of hunger oedema, which has been seen in some of the refugees, not of the poor class, who have arrived lately in this country.

A report by Prof. Heymans of Ghent, made a year ago, gave the consumption per head per day of the Belgian people in 1939 as 2,868 calories, compared with present rations, including supplementaries, of 1,450 for children of 6 to 14, and 1,230 for adolescents of 18 to 21. It is stated that in Liége a daily ration of 1,300 to 1,500 calories has resulted in an average loss of weight of 12% in the individuals attending the polyclinic of the university. Apparently there is no striking rise in infant mortality. In 1939 the rate was 73 per 1,000 births, and in 1942 it was 78 (it is not clear whether these figures relate to the whole country or only to certain maternity clinics). A supplementary ration is allowed to tuberculous persons, and during the first six months of 1942 the number of persons receiving such allowances rose from 69,000 to 88,500. Heymans says that if the Belgian people continue to be undernourished tuberculosis will assume more and more a catastrophic character, causing a fatal enfeeblement of the race. A great shortage—in some cases a complete lack—of necessary drugs began in 1941, and in view of the embargo afterwards imposed by the British Government there is an element of tragedy in Heymans's further statement that "we are permitted to entertain certain hopes of still more important arrivals of medicaments."

Famine in Many Lands

Some further light on the European situation was afforded at a conference called recently by the London Area Committee of the Association of Scientific Workers. Another Belgian authority, Dr. A. Marteau, gave an account of the situation in actual weights of food, not calories. Millions of Belgians, he said, now exist on a daily ration of 1/2 lb. of poor-quality bread, a few potatoes, and occasionally a tiny piece of meat. At the same conference conditions in Czechoslovakia were described by Dr. V. Kruta, who said that in that country the rations are deficient in energy value by some 500 to 800 calories a day for all classes of consumers; they are deficient also in protein and in vitamins, especially A and D. Here again an alarming increase in tuberculosis is recorded, as well as a rise in general and infant mortality. The occurrence of a new skin disease suggestive of vitamin A deficiency is mentioned.

Greece still presents a dire spectacle of famine. Dr. A. Cawadias gave the conference an account of the intense famine periods, separated by certain lulls, since the occupation. The arrival of some cargoes of foodstuffs gave a restricted relief, and brought down the terrible mortality and morbidity, but the occurrence of some epidemics, especially of dysenteric diseases, and of typhus in Athens and elsewhere, has confirmed what was already known—that the effects of famine do not cease with arrival of food. During 1943 continued malnutrition in Greece has resulted in a great increase of malaria, hunger oedema, and tuberculosis.

The task before the U.N.R.R.A. is certainly formidable, and, as Prof. J. R. Marrack urged at the conference, it is most important that it should have power to acquire stocks and have control of shipping and internal transport. Certain lessons and warnings may be gathered from the end of the last war, when the relief given was twice blessed, because although the giver—mainly the American taxpayer—was not repaid, the cost to him was less than that of the dislocation of economy which would have occurred if the farmers in the United States had been left with the stocks on their hands. But supplies last time were, nevertheless, inadequate; they were not based on physiological needs, which then were not so well understood as they are now, and they were mainly just what happened to be surplus.

COMMUNAL RESTAURANTS

Sir Thomas More, 400 years ago, predicted the communal restaurant. He pictured the whole of the citizens of the ward coming at appointed hours to dinner or supper, saying that it was "a folly to take the pain to dress a bad dinner at home when they might be welcome to good and fine fair so nigh at hand at the hall." The 2,000 public canteens now dignified as "British Restaurants" may be the beginning of the realization of More's dream, or they may prove to be wartime developments and fade into nothingness when commercial catering is fully resumed. But we are told that rationing will continue perhaps for years after the war, so that municipalities may continue to provide a restaurant service as they provide baths and wash-houses or parks and gardens. Meanwhile these restaurants are evoking a new social form. They are serving over half a million people every day, and it is estimated that they are probably saving 200,000 of these from the monotony of a carried sandwich lunch or the inadequacy of a "snack." These communal feeding centres made their appearance during the aerial bombardment of 1940. They were, spiritually, next door to the emergency centres for the relief of the homeless. It was considered a good thing to have a number of public kitchens in running order. But they have persisted and have acquired a certain pride of their own. There remains about them an element of improvisation; the staff are less professional, though not less efficient, than in ordinary catering establishments, and there is a certain homeliness about the arrangements. Most of these places are controlled by the local authority, but a certain number by voluntary committees recognized by the Ministry of Food. They are not run for profit, which is not to say that they are more or less efficient than establishments which are. The Research Group of the London Council of Social Service, under the direction of Mr. F. Le Gros Clark, has made a study of a cross-section of these places in London and has published the results in a sixpenny pamphlet obtainable from the offices of the Council (7, Bayley Street, W.C.1). The group found the restaurants generally bright and roomy, some of them with mural decorations, the arrangements approximating rather to the mess-room or refectory than to the traditional restaurant. The food is fresh and good, cleanly prepared and served, and cheap. The customers are drawn mostly from those who work in the neighbourhood and require a meal away from home, but there are two special categories served—housewives and elderly persons. The housewife comes, it must be supposed, to eke out the domestic ration or to save fuel and kitchen work. As for aged persons, a large number of these restaurants give special treatment to old-age pensioners, who obtain their meals at a lower price and are allotted a special table or served at a special hour. No doubt many of these old people live in single rooms and neglect their dietetic welfare. It is no small benefit to them to have a hot meal, served by a considerate staff, and accompanied by cheerful conversation with their kind. Mr. Le Gros Clark suggests that a medical survey might usefully be made of a group of 70-year-old men and women who attend regularly at one of these restaurants and a similar group who do not. It is possible, of course, that these British Restaurants might be used, quietly, for the inculcation of better food standards. In some cases the management are said to discuss food values with their customers or even to organize demonstrations in favour of certain dishes or certain food habits, popularizing the salad, the cheese dish, perhaps even the meatless day. But up to now it is their social value and their nutritional value for large numbers of people who otherwise would be indifferently fed which merit their continuance.

Reports of Societies

SURGICAL PATHOLOGY OF RECTAL CANCER

In his presidential address to the Section of Proctology of the Royal Society of Medicine Dr. CUTHBERT E. DUKES gave a general survey of the surgical pathology of rectal cancer and analysed the results of treatment of more than 1,000 patients.

The position of a malignant tumour in the rectum made little difference to prognosis after excision provided no lymphatic metastases were present, but in cases with glandular spread the survival rates were slightly better for tumours of the upper and lower thirds than of the rectal ampulla. The size of the growth was no indication of the extent of spread, but deep ulceration was usually a sign that it had penetrated deeply. It was rare for rectal cancer to spread upwards within the bowel wall for more than a short distance above the visible margin of growth. Signs of intravenous spread had been found in 17% of operation specimens of rectal cancer, being commonest in anaplastic growths of a high grade of malignancy. Hepatic metastases were more likely to be found in these cases. The survival rates for patients with demonstrable venous spread were not so good as for those without venous involvement, but much depended on the extent of the intravascular growth. If firmly fixed and limited to the outer margin of the primary tumour it had about the same significance as an isolated lymphatic metastasis, but if massive and accompanied by loose clots the passage of emboli to the liver was almost certain to have occurred. Lymphatic spread was closely dependent on the histology of the primary tumour, being rarely found in growths of a low grade of malignancy, but almost invariably accompanying rapidly growing anaplastic

tumours. Patients with one to three metastases often survived five years, but the fifth anniversary was rarely reached by patients with four or five. A survey of the extent of local and lymphatic spread in a large series of patients treated by a combined operation had shown that about half of these might have stood just as good a chance of cure if a perineal excision had been done instead. In the other half it was probable that if the surgeon had known in advance all that was subsequently revealed in the pathologist's report concerning extent of spread he would have decided that the patient stood a better chance with a combined excision.

Recurrences and Survival Rates

A survey of the results of surgical treatment in a series of more than 1,000 cases showed that most recurrences manifested themselves within the first three years after operation, and that it was very rare for a patient who had passed the fifth anniversary of his operation to die of rectal cancer. Judged on a five-year survival basis, the surgical treatment given to these patients cured approximately half of them. Rectal cancer was commoner in men than in women, though at the time of treatment the disease was generally at a more advanced stage in women. After operation the survival curves followed a similar course for three or four years, after which there were more female survivors than male.

More than 80% of cases in which growth was limited to the rectum and more than 60% of cases in which, while there was spread to perirectal fat, there were no glandular metastases, were cured by operation, but unfortunately less than half the patients at present were operated on at these stages. Once lymphatic spread had begun, the prospects of surgical cure rapidly declined. For cases without lymphatic metastases the survival rate was practically the same irrespective of the type of operation, but for those with lymphatic metastases the results of the combined operation showed an improvement of 13% on perineal excision, and with recent improvements in surgical technique this figure might reach 15 or 20%.

In conclusion Dr. Dukes said that one obvious way of improving the results of surgical treatment would be to provide more facilities for postgraduate study and the sharing of experience. It should also be made better known that in its early stages rectal cancer could be completely cured, and that even in more advanced cases surgical treatment was often satisfactory. The need was earlier diagnosis.

CONTRIBUTION OF ORTHOPAEDIC SURGERY TO HOSPITAL DEVELOPMENT

In an address from the chair of the Section of Orthopaedics of the Royal Society of Medicine on Nov. 2 Mr. S. A. S. MALKIN spoke on the contribution of orthopaedic surgery to hospital development, and took as an example Harlow Wood Orthopaedic Hospital, near Mansfield, Nottinghamshire, with the development of which he was much concerned.

Mr. Malkin recalled a paper by the late Sir Robert Jones and Mr. G. R. Girdlestone which appeared in the *British Medical Journal* in 1919 concerning a proposed scheme for the cure of crippled children. It interested him because he was then working in a military orthopaedic hospital and had become accustomed to Army organization, whereby the sick and wounded, wherever their sickness might have developed or their wounds have been received, were sent to a place where the appropriate treatment was available for their condition. He was impressed by the absence of such a scheme for civilians, whose treatment seemed to depend not on their need but on the place where their need arose. The scheme put forward by Sir Robert Jones and Mr. Girdlestone, apart from providing treatment for crippled children, suggested a small-scale experiment in hospital organization. It contemplated a division of the country into districts, in each of which would be established a country orthopaedic hospital with a system of scattered out-patient clinics, while administration and treatment would be co-ordinated by a committee working under the Ministry of Health.

In 1923 Mr. Malkin was appointed orthopaedic surgeon to the Nottingham Cripples Guild for the purpose of developing a scheme on the lines of Sir Robert Jones's national plan. The work began in a small physiotherapy clinic, but was assisted by an allocation of a few beds in a hospital fifty miles from Nottingham. Ultimately 40 patients were accommodated at this hospital, all of whom were paid for by Nottingham authorities, public or private. In the meantime a larger new out-patient department was built at Nottingham, and later six voluntary clinics were established in various centres, each with its independent committee and responsible for the maintenance of the patients from its own area requiring orthopaedic treatment. After these clinics had been established a joint committee on which all of them were represented was formed with the object of pushing forward the provision of an orthopaedic hospital to serve the region. A site was given by the late Duke of Portland, and in 1929 a hospital of 80 beds was opened by the present King and Queen to serve Nottinghamshire and parts of adjoining counties. Additions were made to the bed accommodation, which by 1936 had increased to 155, including a small private block.

Co-operation with the State

After pointing out some special features in the planning of the hospital, Mr. Malkin said that when the war came the Ministry of Health took the view that in the North Midland region it was better to enlarge an existing institution than to create a new one for orthopaedic work. By agreement with the hospital committee the Ministry acquired in the hospital grounds certain sites on a twenty-years lease for its own wards and ancillary buildings, and on these sites E.M.S. buildings were erected. With these additions the hospital was able to accommodate 355 patients; it also controlled an annexe of 50 beds used as a rehabilitation centre, and was linked with two Red Cross homes.

Apart from the cost of the E.M.S. buildings, all the capital required for the hospital had been raised by voluntary means, but the various clinic committees were expected to provide the cost of maintenance of all the patients from their areas. The staff consisted of consultants, all of whom were available as and when required and were paid for each visit, and a central staff of orthopaedic surgeons paid on a part-time basis. The latter were responsible for the work of the hospital and the clinics within easy access. A complete scheme of rehabilitation had been developed, starting with ward exercises. Recently land had been purchased on which to build a vocational training centre.

Mr. Malkin claimed that this scheme had demonstrated that hospitals controlled by voluntary committees could preserve their autonomy and yet co-operate fully with the State, and also that the service of regional hospitals could be made available throughout the region and the staff of hospitals in outlying districts be associated with the central hospital. The plan put forward by Sir Robert Jones and Mr. Girdlestone nearly a quarter of a century ago had pointed the way to a method of co-operation with the State for the provision of specialist services throughout the country, and had enabled orthopaedic surgery to make a real contribution to hospital development.

Correspondence

The Future of Medicine

SIR,—Anyone who has studied the history of our art, from the age of Hippocrates onwards, knows that, in its broad outlines, medicine shows a noteworthy parallelism with the reigning political theory and practice in each age and country. Of this I could easily, if required, adduce examples—indeed, I did so in my book *Health and Conduct* published 20 years ago. But no competent medical historian nowadays will question the fact.

At present throughout the Western world—including Japan, which, like Russia, is now in all essentials Westernized—standardization and regimentation of the people hold sway, official justification being found in the prevalent social insecurity or in military necessity. It would therefore be absurd to expect that in this country any official or Government-sponsored scheme planned "for the better promotion of health" will not partake essentially of this principle of regimentation. The underlying idea will be that in future the *hoi polloi* will be diagnosed and treated much less as individuals and much more in categories—as "cases," in fact. Accordingly the new health centres, from which much is by many expected, will necessarily come to approximate in character to sick parades, while domiciliary treatment will mean treatment in sick billets; any case obviously seriously ill will, if acute, be "rushed," and, if chronic, "shoved," into hospital. The ordinary average doctor will in future be styled M.O. He will also be no longer an individual but one of a category. His approach to each and every patient will be purely objective, and one M.O. will be at any moment replaceable by any other without the patient's health being in the least affected by the change.

Up to a point this sort of medical practice will work, as it does work in the combatant Services now. But just as

war itself, on however vast a scale, only works up to a point and finally breaks down as a method, so it will be with all this materialistic organization of health services. Man is by his nature an individual, not a cipher, and he expresses himself primarily in a concrete environment of actual neighbours, and only secondarily at best in an abstract one of "fellow countrymen" or even "humanity." Such is man's nature; and Nature, even when driven out with a pitchfork (*naturam expellas furcâ*), has a way of reasserting herself, and sometimes, if too long pent up, with explosive and shattering violence. Galen, the medical historian and synthetist of Graeco-Roman antiquity, was for ever repeating that the real claim of his master, Hippocrates, to divinity (or sainthood) rested on his reverence for, and obedience to, Nature (*Physis*). Modern Western civilization, by its scorn for and defiance of man's essential nature, threatens without a doubt to gravitate downwards into anarchy.

Meanwhile in the sphere of medicine is it not clear that unofficial quackery is going to raise its head *pari passu* with official regimentation?—I am, etc.,

North Queensferry, Fife. A. J. BROCK.

Medical History of Individuals

SIR,—In view of the talk of a comprehensive medical service there is one reform which is immediately applicable, urgent, and which would, unlike most medical reforms, be universally welcome. At present in the Army, I understand, there is a wonderful system whereby a man's whole medical history from the time of his medical board onwards is recorded and readily available for use by his M.O. Consider the chaos in civilian life. When a child leaves school and comes on the panel his panel doctor can only get his school medical record by writing for it. The medical board for examining a recruit does not see his panel medical record. When he is discharged from the Army again his panel doctor can only get his Army medical history by writing for it and enclosing the written permission of the patient. The man may then have to be examined by the Home Guard medical officer, by some doctor to see whether he is fit for fire-guard duties, etc., and in no case can the doctor obtain his whole medical history; each doctor has to examine him afresh.

The silly part is that the Government already has the answer to many of the questions which it poses to the examining doctor, but filed away in another Department. Thus the factory doctor is supposed to examine a new worker thoroughly and record the result, even though the Army medical board which has just discharged him or the medical authority of the school he has just left has the complete answer. Why cannot each panel patient, at any rate, have in his medical record a complete account of his condition every time he is examined on behalf of the Government? And why cannot that system be extended to the rest of the nation?

Finally, may I put in a plea for better medical records on the panel. Most of them are terrible. Usually only the medicines given are recorded. Sometimes the doctor keeps a list of the diagnoses; sometimes one can see from the record what organs were removed in the patient's last visit to hospital. Very seldom are the physical signs recorded, yet these are often of vital importance later, and of great assistance to the doctor at the time, in arriving at a diagnosis.—I am, etc.,

Colchester. M. E. LAMPARD.

Tuberculosis in Nurses

SIR,—In a leading article in the issue of Dec. 4 you regret that England has done nothing towards the investigation of the problem of tuberculosis in nurses. For once this country has not been quite so inert and remiss as usual. The Royal College of Physicians has for the past nine years been conducting just such a research, on a large scale and over a ten-year period, with the aid of the Prophit Trust. A preliminary report on the work has been published by Dr. F. Ridehalgh in the *Lancet* (Oct. 17, 1942, p. 463); a final report on tuberculosis in nurses will, it is hoped, be published shortly.—We are, etc.,

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Pneumonitis

SIR,—Dr. Maxwell raises an important point in his letter of Nov. 27 (p. 689). Although the New Sydenham Society's *Lexicon* of 1899 uses the word "pneumonitis" as synonymous with "pneumonia," we must agree with him that the latter term has by long custom come to denote a specific disease "running a definite clinical course, with a high mortality if left untreated and terminating by crisis." He might have added also that it is accompanied by a perfect series of demonstrable reactionary manifestations in the blood, typical of a specific bacterial infection. It is true that even prior to the advent of sulphonamide treatment the classical pneumonia, like many other diseases, was changing in type and was occurring in decreasing incidence whilst crises seldom presented. With the modern use or abuse of these drugs the picture may never be seen.

When the influenza epidemic, with its usual periodicity, recurred in 1918 a new picture—new to our generation—presented itself. The lungs were obviously affected, but physical signs of consolidation were obscured by the associated acute emphysema, although later *x* rays were found to demonstrate areas of infiltration. There was much toxaemia, no leucocytosis—on the contrary, often a leucopenia with monocytic activity, characteristic of virus infections in general—and at times a slow pulse. Anatomically the entire lung tissue was involved, and I have described elsewhere the degeneration and striking friability of the whole lung in fatal cases. In 1918[1] I used the term pneumonitis to denote the generalized inflammation of the lungs, although later I felt that the changes were degenerative and of toxaemic origin rather than inflammatory. Later I included the more chronic changes, which at times accompanied delayed resolution these often prolonged and even simulating tuberculosis, for which they were mistaken in *x*-ray films.

If the term pneumonitis be accepted, it does not, as Dr. Maxwell says, signify anything more than an inflammation of the lungs, and should suffice until a more significant name based on a sound aetiology be coined. Furthermore, by not confounding it with pneumonia, which by now has come to denote a well-defined infective disease, our aetiological excursions will not be obscured. Instance the persistent attempts during the pandemic, and later, to bolster up Pfeiffer's bacillus as the causal factor. Whether the primary atypical pneumonia recently described is of this nature I must not opine. That it is a new disease is as unlikely as that any disease is new. Hamer[2] pointed out that one of the striking characteristics of influenza is its power of impressing the mind of observers as being a "new disease." It is significant that at the same time as we are hearing of this disease we are experiencing an increasing incidence of "virus" diseases—herpes zoster, infective jaundice, glandular fever, poliomyelitis and polyneuritis, and, latterly, influenza. Hence let us not dwell too long on an unusual diseased state lest we lose perspective, but rather ask ourselves whether we are working up to a new epidemic, remembering that influenza recurs in epidemic form about every 25 years. And, again, I recollect that in 1918[3] I described an epidemic of "glandular fever" which merged into the influenza pandemic, and which I still feel was part and parcel of the same state, the virus having gradually exalted itself.

However, my attempts at nomenclature were not favourably received. Hence Dr. Maxwell's letter brings some satisfaction, even at this late date. Nor would I claim any originality for the use of the term. In the Westminster Hospital Museum Catalogue for 1905 and later years I find I have described specimens under the name of pneumonitis, although these were not exactly what I had in mind later. I have no doubt that I gathered in the word from my senior colleague Dr. R. G. Hebb—that redoubtable and learned physician-pathologist. Finally, if the condition which has aroused this correspondence be of benign nature, perhaps the name "pneumonicula," described in the Sydenham *Lexicon* as a *slight* pneumonia, might be suggested to those who find it difficult to depart from traditional usage.—I am, etc.,

London, W.1. J. BURNFORD.

REFERENCES

1 *Proc. roy. Soc. Med.*, 1919, **12**, 49.
2 Milroy Lecture, 1906.
3 *British Medical Journal*, July 20, 1918.

Omens of Influenza

SIR,—In your leading article of Dec. 4 (p. 717) on the outbreak of influenza, in which you ask if "there are any omens by which we could predict a widespread outbreak," you comment on the apparent conflict between your information that virus A has been isolated and the statement by the Ministry of Health that "the illness from which most of the victims are suffering is not the real 'flu virus." This apparent difference might, I think, be explained in terms of time. It would be interesting to know if the Ministry has carried out, or means to carry out, further investigations in the same area to see if the virus A can be recovered in a later phase of the epidemic.

The simplest way of correlating these conflicting observations appears to be to regard influenza as a potential complication of any epidemic of common colds; not so much a complication of the individual who suffers from a cold, but as a social complication, for it is rarely the agents who activate this vast phenomenon who are themselves the greatest sufferers. This may be the reason why there is an apparent lag of a few weeks from the start of the wave of colds to the appearance of the influenzal wave.

Unfortunately I do not know how to express this more clearly, nor can I offer any explanation which is not highly speculative, but I published a chart illustrating this feature of the 1940 epidemic (*Journal*, May 25, 1940, p. 869). Recently a friend, who had studied my chart on that occasion, asked me if the epidemic had taken me by surprise, and I invited him to come to my surgery and he would *see* the answer for himself. The chart is open for inspection. There are omens of influenza, but it is impossible to imagine how they could ever be seen by anyone who tries to look for them through a fog of viruses.—I am, etc.,

Halifax. A. GARVIE.

The Element of Fatigue in Disease To-day

SIR,—I am grateful to Dr. T. L. Hardy (Dec. 4, p. 725) for bringing out this factor in regard to peptic ulcer cases. It is showing itself at present in a number of asthmatics (and three angioneurotic oedema patients), who would otherwise have been able to "carry on," and would, therefore, never have come under my notice. One, a young woman of 23, a stockbroker's clerk by day, felt impelled to do her bit by night as an officer in the voluntary A.T.C. Another, a confectioner, short-staffed and compelled to work hard in both her bakery and her shop, added to all this amateur acting at night. A third, an accountant, only had an asthmatic paroxysm in the night after he had mown the lawn in the evening. One knows, of course, that tiredness increases an allergic tendency, and that a dish—e.g., some réchauffé—which will produce no ill effects if taken at lunch-time will, taken at supper by the same person, be followed by a thoroughly restless night.

In the next letter in the same issue Sir Arthur Hurst also reminds us of the frequent association of "acidity" with achlorhydria. This complaint is often met with in asthmatics, and routine gastric analyses of them often show achlorhydria or hypochlorhydria.—I am, etc.,

Manchester. F. E. TYLECOTE.

Gunshot Wound of Innominate Artery

SIR,—Mr. G. F. Langley (Dec. 4, p. 711) records a case of gunshot wound of the innominate artery. He explains the hemiplegia which resulted on the hypothesis of cerebral anaemia due to spasm of the common carotid artery, which was observed at operation. This, however, was not checked by post-mortem examination.

In four cases of gunshot wounds of the carotid arteries, followed by hemiplegia and a fatal result in 26, 18, 15, and 72 hours after receipt of the injury, a post-mortem examination was made by Prof. John Shaw Dunn (*Lancet*, Jan. 13, 1917, p. 57). In each case an embolus had blocked either the trunk of the middle cerebral artery or its branches, with several inches of intact vessel between this point and the site of injury. In one case only was the common carotid tied on account of continuing haemorrhage from the wound. In one other the carotid trunk was found completely severed.

The progress of the paralysis beginning with a monoplegia in the case so carefully observed by Mr. Langley suggests that the pathological process may have been the same. If so the gallant attempt of Mr. Langley to save his patient was doomed to failure from its inception. The specimens have presumably been destroyed in the wreck of the Museum of the Royal College of Surgeons, but two of them are illustrated in the paper by drawings by Mr. A. K. Maxwell.—I am, etc.,

London, W.1. LIONEL COLLEDGE.

March Fracture of the Metatarsals

SIR,—All who have fresh evidence about obscure conditions should publish the facts. It is more important that what is written should be strictly accurate as to facts and up-to-date as to information and views published by others. In both respects Fl. Lieut. Barns's article on march fracture of the metatarsals (Nov. 13, p. 608) leaves much to be desired. This letter is intended to correct some mistakes and misconceptions which appear to have arisen.

No discussion of the aetiology and diagnosis of march fracture can be complete if it ignores authoritative works on the structure of the foot. As in the case of so many other "minor" abnormalities of the foot, a proper conception of the structure and nature of the foot is essential to a correct appreciation of observed facts. In his reading Barns appears to have overlooked the foot in his concern with the metatarsal. Yet even in the limited field of march fractures he has omitted several very excellent papers. Those of H. Dodd (1933) and J. Blair Hartley (1943), for instance, are of the utmost importance. It is not surprising, therefore, to find him stating: "No obvious foot deformity was observed." "The aetiology of the lesion is obscure." "The *injuries* were sustained . . ." (My italics.)

The essence of the diagnosis of march fracture is that there has been no "injury." In civilian life it is all too clear that the onset is spontaneous. In the Forces it is equally clear that the only trauma is that of repeated physiological strain and stress. In both groups the problem is not so much why march fractures arise as why they do not occur more frequently. Barns states that in one of the twenty cases the cause was a single direct trauma. In fourteen others there is the possibility of a single direct or indirect trauma. In only five of them the fracture "could not be ascribed to any particular exercise." It is therefore necessary to ask whether any of them are true march fractures—i.e., spontaneous stress fractures. We know that in civilian life it does not require the slightest change of habit to produce them. They occur quite spontaneously, *though not without explanation.*

As I wrote the last sentence an acquaintance, a woman civilian aged 43, asked me if it was any good rubbing an aching foot. She then told me the following story. Three days previously she had woken up with an ache across the dorsum of the foot. She rubbed it. As she walked about during the day she felt as if her toes were being forcibly dorsiflexed. A little pain developed. Her foot swelled over the top of her shoe. The pain was worst if she stood up on her toes. She limped a little, but was not otherwise incommoded. The swelling had now gone, but the ache persisted intermittently. I told her of Barns's article, read out to her the identical symptoms which he records, and told her of the sentence I had just written. An examination of her foot revealed the other well-known points—namely, tenderness restricted to the dorsal aspect of one (the second) metatarsal, no swelling, no bruising, and *the expected deformity of the foot.*

In her case the deformity was obvious. (It was confirmed next day by *x* rays, which were otherwise "normal.") There was an everted heel, a pronated foot with bulging scaphoid, and "low arch"; there was also some hallux valgus and spread metatarsal. The essential deformity (for march fractures of the second metatarsal) was the elevated first metatarsal. When she stood with the heel upright the first metatarsal head left the floor and the hallux plantar-flexed. It has been shown by D. J. Morton, and confirmed in Britain, that each metatarsal transmits a share of the weight borne by the forefoot. It is normally two units for the first and one unit for each of the other four metatarsals. Morton (1935) showed that the first metatarsal (and the internal cuneiform) may be hypermobile. Lambrinudi (1937) has described cases of permanently elevated

first metatarsal. First metatarsals so short that they do not take their share of the weight are described. Whichever the cause, there is failure of support at the front and inner side of the foot, and the foot rolls over into pronation. When this happens a change may occur in the second metatarsal. If it is elevated or hypermobile nothing happens to it. When it is firmly fixed it either hypertrophies (Morton's and Kohler's stout second metatarsal), undergoes the change known as Kohler II, or is affected by march fracture—i.e., stress fracture. The deformities are present for all to see, but they may be very slight. As I have pointed out on other occasions, the foot is a very small object, made up of small and even minute structures, and when we examine for abnormalities we must look for small deviations from the normal. It is failure to appreciate that fact which leads to the statements that there was "no obvious foot deformity" and that "the aetiology is obscure."

The explanation of march fracture affecting other than the second metatarsals—and I have seen one even of the fifth—is failure of the supporting action of adjacent metatarsals so that undue stress is thrown on the one which fractures. I have seen the third fracture after removal of the head of the second. I have seen the second fracture, become united, and then the third metatarsal give way. It should, perhaps, be explained that another reason for overlooking what many of us now regard as very evident is a misconception of the nature of the foot. It is not yet widely accepted in Great Britain that the shape of the foot, as well as its lateral balance, depends on the shape of the bones and the strength of the ligaments. Despite the experimental evidence of D. J. Morton and Norman Lake and the clinical evidence of Jack and of Lambrinudi—all of which I have been able to confirm without reserve—many British surgeons persist in the view that the muscles are the main support of the dome of the foot. The view arose as a result of the work of Sherrington on contractural and postural tonus, and is the result of misapplication of his findings. So far as the shape and balance of the foot are concerned, the part played by the muscles is to balance the foot on the leg at the universal joint and to lock the bones into a firm dome under certain circumstances. But they play second fiddle to the ligaments. I demonstrate these points very fully in my film "Some Foot Faults related to Form and Function." There is no room to amplify them here. The principle to grasp is that a structural defect of the foot frequently leads to other, and therefore secondary, defects.

The last important point to make about march fractures of the metatarsals is that it is impossible to diagnose them with certainty by *x* rays if one pays attention only to the fractured metatarsals. The various points about hypermobility, elevated or short metatarsals must be taken into account. Even then one can say only that it is *probably*, or is *unlikely* to be, a march fracture. I have a series of *x*-rays of march and ordinary traumatic fractures of metatarsals which exhibit a very wide diversity of serial *x*-ray changes. There is no series of changes which characterizes or distinguishes one from the other. In some cases a fracture due to a single direct trauma undergoes the changes that we have in the past accepted as characteristic of march fractures. In others a march fracture shows those said to be characteristic of the single direct traumatic type. In some the fracture may be visible before the "periosteal reaction," while in others the subperiosteal new bone shows before the absorption and osteoporosis at the fracture site demonstrate the loss of continuity of the bone. The final result may be a complete return to the normal architecture or the presence of a spindle of bone. It depends on whether displacement of the two fragments takes place. Treatment makes no difference. My practice is to apply elastoplast strapping to either type, using novocain infiltration to abolish pain if it is severe. But when most of the pain is due to contusion of the soft tissues over a wide area it is often wise to rest the foot in a walking plaster for a short period.

In short, people suffer from march fractures because the structure—the architecture—of their feet is wrong, and not because of any unusual external factor. The only part that external factors play is the same as applies to any mechanical structure. A bridge designed to carry 5 tons is more likely to give way when 10 tons go over it than one strong enough to support 10 tons.

I have made this letter long and strong because we have reached a stage in the knowledge of the behaviour of the foot when we can no longer be content to impede the diffusion of knowledge by accepting without protest articles which ignore facts accumulated by other workers.—I am, etc.,

Manchester. W. SAYLE CREER.

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Peptic Ulcer in Youth

SIR,—In the correspondence columns of your issue for Oct. 23 (p. 523) Mr. Blacow Yates referred to a case in which gastro-enterostomy was carried out for pyloric stenosis in a youth of 19 years, and threw out the suggestion that I might be aware of the performance of this operation at an earlier age. I well remember the days when gastro-enterostomy was done for congenital hypertrophic stenosis of the pylorus in infants, but with only very occasional success.

Recently, I am glad to say, there has been a revival of interest in congenital defects generally, and gastro-enterostomy has been carried out on several occasions for atresia of the duodenum. My old pupil Stewart Feggetter of Newcastle-upon-Tyne has operated on four cases, one of which he reported in detail in the *Lancet* of Aug. 17, 1940. In May of this year, when I last visited my old hospital in Newcastle, I was invited by Mr. Norman Hodgson to deal with an infant just 5 days old and the victim of atresia which had been referred for surgical treatment by Prof. Spence. In that case gastro-enterostomy was entirely satisfactory, and the infant was thriving some months later. But these cases were clearly not of the type Mr. Yates had in mind.

In March of 1925 Dr. Dunlop Lickley of Gosforth asked me to see a little girl of 4 suffering from increasing and most troublesome vomiting which had come on with pain and was attended with rapid wasting. The patient had been a perfectly normal infant, and up to three weeks before I saw her was regarded as a healthy child. There was no blood in the vomit and no history or signs of melaena. An *x*-ray examination showed a very much narrowed pylorus with marked stasis. There was also albuminuria. As the condition did not yield to medical treatment and the child was rapidly getting worse operation was advised. I suspected that we were dealing with a condition simulating congenital hypertrophic stenosis. At the operation I found the pyloric end of the stomach contracted, thickened, and reddened, and the lymph nodes were enlarged. The appearances were not like those of ulceration. Posterior gastro-enterostomy was carried out, but the child developed regurgitant vomiting, and on the fourth day I had to make an entero-anastomosis. After that recovery was slow but assured, although there was some recurrence of stomach symptoms two years later associated with albuminuria. Thereafter she has kept very well, and up to the present time, 18 years after operation, has had no further return of her stomach symptoms. The patient is now in good health, is married, and expecting her first baby. Thanks to the care of Dr. Lickley the original *x*-ray films have been preserved and were kindly sent to me. They show marked dilatation of the stomach with gross narrowing of the pylorus and some deformity which my radiological colleague, Dr. Topham, pronounces as compatible with ulcer.—I am, etc.,

British Postgraduate Medical School, W.12. G. GREY TURNER.

Diet in Peptic Ulcer

SIR,—In view of the disastrous effect of peptic ulceration on industry as well as on personal safety and happiness it is important to stress the uselessness of trying to make much impression on it by minor tinkering with the articles of diet.

The patients concerned in this correspondence are either those working despite the presence of an active ulcer or those who have a healed ulcer. It is most important to know under which head the patient comes. As regards the former and, I fear, numerous class, they should be recumbent and under treatment at the earliest opportunity. However, many continue to work, taking only a day or two off during the bouts of pain; eventually they present a callous ulcer. With careful

and repeated gastroscopic control, I find no difference in the comfort and rate of healing between the hospitalized patient on an "ulcer regime" of frequent feeds and alkalization and the hospitalized patient taking the normal hospital diet, only three meals a day and no drugs at all. In view of this fact I do not think this class of patient will be much benefited by instructing him to follow an abnormal dietary regime which necessitates special difficulties and anxieties about food at each meal.

The second class—the patient with the healed ulcer—appears to be comfortable on a normal full diet with the extra milk usually allowed. Should such a patient complain of dyspepsia one should suspect that the ulcer is really still unhealed or has relapsed. My own practice is to retain a patient in bed until proof of healing is obtained by gastroscopy in gastric ulcer and by radiology in duodenal ulcer cases. The practice of regarding the disappearance or absence of physical signs or of symptoms as proof of the healing of ulcers cannot be too strongly condemned. Reliable physical signs of ulceration are often absent from the start, and it is common to see an active penetrating ulcer through the gastroscope several weeks after all pain and discomfort have gone.

The most serious feature of the peptic ulcer problem, however, and the one which so often makes surgery advisable, is not difficulty in making it heal, but the strong tendency to relapse, especially in the chronic ulcer, and even after good healing. Local deformity, fixation, or stenosis makes the scar site more susceptible to local traumata, and it is probable that the thin, newly regenerated mucosa, which occupies the centre of the scar, lacks the protective anti-acid-pepsin factor or lacks mucus-secreting cells. Again, I doubt if any special dietetic factors, apart from the coarsest roughage, would make much difference to the relapse rate. Many of our most conscientious patients relapse repeatedly. A varied, easily prepared diet containing adequate vitamin, especially C, as well as adequate nourishment is important in the attainment and maintenance of healing. Only gastric irritants and coarse roughage need be avoided.

Careful inquiry directed to the time preceding the first dyspepsia often elicits a history of irregular or missed meals, or a sudden change in the hours of taking the main meals. This suggests that workers and employers should be informed of the importance of getting regular meals leisurely masticated with rest before and afterwards in reasonably pleasant surroundings, and of taking breakfast before starting work. Much also could be done to enable workers to live near their place of work, which would help them to have extra time for leisure. Shift work should be regarded as bad in principle, and might be rectified by making employees either day or night workers—possibly making financial compensation to those who adopt the less popular hours. These, too, are the lines on which we must tackle the more important question of the prevention of ulcer.—I am, etc.,

NORMAN TANNER.

Scabies

SIR,—Dr. MacCormac's article (Nov. 27, p. 667) on three skin diseases in wartime deals instructively with this subject, and if those treating scabies all carry out his directions an immense improvement in the present situation will occur. Two applications of 25% benzyl benzoate emulsion, as he describes, will give uniformly good results, although authorities with really skilled treatment orderlies have obtained equal success with one application (see Graham, J. R., *Journal*, 1943, **1**, 413). It is tragically common still to find people with a sulphur dermatitis on one part of the body and a live sarcoptic infection on another; to find patients who have been instructed to apply a medicament daily for an unlimited period and to boil all their bedclothes every day; and to find children deprived of months of schooling because of a disease which can be rendered non-infective in a matter of minutes and completely cleared up almost as rapidly.

With regard to disinfestation of bedding and garments, I still feel that, although this can do no harm and may occasionally be useful, provided that it does not divert energies from more important measures, Dr. MacCormac's evidence of a "minor epidemic occurring among fire-watching parties through communal blankets" requires some comments. I am afraid this phrase will be quoted and reproduced in textbooks, so that in twenty or thirty years we will be faced with the statement that such an epidemic did, in fact, take place during this war. I have been unable to find evidence of localized epidemics of scabies, either among fire-watchers or among groups of military personnel living under confined conditions. Of course one commonly sees fire-watchers with scabies, but then practically the whole adult civilian population of the country engages in fire-watching. The evidence that fire-watchers have contracted their scabies through "communal blankets" is scanty and is mainly based on unsupported statements from the patients themselves. Similarly, in the early part of the war practically every soldier with scabies attributed his infection to blankets, but it has been shown since that most of these infections came from outside civilian sources.

I would submit that, while scabies is widespread and is indeed causing a minor epidemic, there is no evidence to suggest that this epidemic has been greatly aggravated by communal blankets among fire-watchers, nor indeed that fire-watchers, as such, are particularly prone to infection. Furthermore, if a few people are probably infected through the intermediary of fomites, *reinfection* from this source, after benzyl benzoate treatment, is rare, due to the acaricidal medicament on the skin of the subject.—I am, etc.,

Sheffield. KENNETH MELLANBY.

X Rays and the Clinical Society of London

SIR,—In his recent presidential address on the old Clinical Society before the Clinical Section of the Royal Society of Medicine (Nov. 20, p. 651) Dr. J. D. Rolleston said that the most interesting event in its history was the first medical description of *x* rays in this country, which was given by Prof. Silvanus Thompson before nearly 400 members on March 30, 1896. But I was present as a guest of the late Dr. R. T. Williamson, while I was still a school-boy, at a big meeting of the Manchester Medical Society twelve days earlier—on March 18, 1896—when I heard an address by Prof. Schuster on the "Roentgen Discovery." In the discussion which followed I remember a surgeon saying how useful the rays would be in the treatment of fractures, a physician suggesting that they might reveal the presence of an aneursym, and an obstetric surgeon saying, amidst much laughter, that they might help him to diagnose the presence of twins.—I am, etc.,

Oxford. ARTHUR HURST.

Surgical Tuberculosis in South Africa

SIR,—The *Journal* of Aug. 14 containing my letter has just reached me. I did not intend to imply that cases of "the typical non-pulmonary lesions of the disease in humans" are due to the bovine bacillus, but was merely drawing attention to the extreme frequency of surgical tuberculosis in this country. I agree with the rareness of these lesions being caused by the bovine bacillus. Where the bacillus could be identified in cases investigated from this hospital the causal organism has always been the human bacillus.

What has impressed me, however, is the comparative infrequency of both pulmonary and surgical tuberculosis occurring in the one individual. Patients have either pulmonary or surgical tuberculosis, rarely both. It is an admitted fact that human beings can suffer from infection by the bovine bacillus. Is it possible that some of the dairy stock in South Africa is infected with the human bacillus, and in this way accounting for the frequency of the human bacilli in human affection?—I am, etc.,

Lovedale, Cape Province. W. C. J. COOPER.

Analgesia in Midwifery: A "Mechanical Midwife"

SIR,—Having experimented rather gloomily over many years with most of the vaunted techniques for producing analgesia in midwifery the machine described by Dr. H. Rex Marrett in your issue of May 23, 1942 (p. 643), seemed possibly the answer to a matron's prayer. I have now used it in fifty cases of domiciliary midwifery and would like to sing its praises to the skies. With one bottle, for trilene only, it is light-weight and compact. It is completely simple to operate, with no taps to turn or moving parts to go wrong; and it really produces analgesia. It can be left with the mother during the first

stage, so that she can help herself to small doses as the pains get stronger. With a minimum of supervision the nurse can increase the dose during the second stage. If full anaesthesia is needed it is simple to strap on the face-piece and have the patient just where she is wanted in a few minutes.

This machine really does take half the trouble out of midwifery, and stymies that bugbear—the impatient relative. Finally, it costs about sixpence a case, and the machine is sold by Messrs. A. Charles King, Ltd., 27, Devonshire Street. It should be christened "Martha, the Mechanical Midwife."—I am, etc.,

Ashtead, Surrey. W. EDWARDS.

Therapeutic Fallacies

SIR,—I was discussing some therapeutic fallacies with a recently qualified practitioner who swears by ammonium chloride in bronchitis; I inquired how such a mixture (or, for that matter, any mixture) simply by passing over the epiglottis and dropping down the gullet into the stomach could exert an expectorant effect on the bronchial passages. He replied, rather adroitly, that the ammonium chloride is excreted into the respiratory tract, where it acts as an antiseptic and stimulant! Do Drs. Linnell and Thomson accept this pharmacology?

It is surprising that enemata should find a place in the treatment of chronic constipation other than for the well-marked case of faecal impaction. The writers, however, having advocated this method, should make it more widely known that the way to give an enema is not with the old-fashioned enema syringe; this is dangerous and may do injury to the anal canal; the only way to give an enema is with a suitable rubber catheter linked by rubber tubing to a funnel. It should be administered only by a trained person.

Have the writers tried giving the synthetic vitamin B_1—that is, aneurine hydrochloride—for constipation? It is usually obtained in tablets of 3 mg.; 4 to 6 of these should be taken daily in moderate cases and 8 to 10 in obstinate ones. I have known this treatment give quite good results.—I am, etc.,

Salford. JOSEPH PARNESS.

Agents Provocateurs

SIR,—I was interested indeed to see your annotation on the police decoy case and Mr. Reginald Payne's letter on the same subject. This extraordinary incident has a direct bearing on an article of mine, "A Problem in Medical Certification, etc.," which you published in June of last year.

In that article I mentioned the importance of the patient's statement, and I emphasized that not only should the doctor accept any reasonable statement which the patient gives of his symptoms, but that, in fact, he is *obliged* by his professional code to do so. By a reasonable statement is meant a statement which cannot be definitely disproved by a fair and careful clinical examination. His conscience and his honour tell him that his first and prime duty is to his patient, and the law clearly and emphatically tells him that he must not do or *omit* to do anything that would cause him to fail his patient in any way in which a careful and skilful doctor would not so fail that patient. He is expected to bring to bear upon his cases "a reasonable degree of care and skill," and if he fails to do this in any case the civil law always, and the criminal law sometimes, can penalize him very severely. This does not mean, of course, that he is to accept any absurd statement a patient makes to him, but that he must give credence to any statement which, in the light of his knowledge and experience, *could reasonably be true*. He may know that the patient might be exaggerating, as many genuine sufferers do, and he might even be aware that the patient might even be lying; but I maintain that if he is faced with two reasonable alternatives he must always and deliberately accept the one in favour of the patient.

Almost any example from actual experience will convince one of this. Epilepsy cannot be diagnosed in the surgery by any known method of examination, and many practitioners are to-day successfully treating epileptics without having seen them in a fit and purely on the description of the fits given at second-hand by the patient or his relatives, as only the fortunate few have access, even indirectly, to the evidence furnished by an electrocephalogram. The doctor who refuses to certify such a person as being unfit to follow an occupation which could be dangerous to the applicant would certainly be unable to justify himself to the coroner if his patient fell off a steeple or mangled himself in a machine, and legally he could have little hope of rebutting a charge of culpable negligence. In the eyes of his colleagues, and surely before his own conscience as well, he would be little less than a plain murderer.

The thing is so obvious that one feels impelled to apologize for pointing it out, but it is far from being realized even by many doctors! It would be fairly easy, therefore, for any rascally conspirators who were really competent at their shabby job to bring a very telling case against almost any doctor over a question of certification.

This is a most disquieting case altogether, and exemplifies all too well the dangerous tendency which is being exhibited by certain bureaucratically minded people to interfere in those liberties so dearly bought for us by de Montfort, Wycliffe, Hampden, and the rest. I am wondering what is going to happen to me and to my colleagues when and if we are all put under any central control, however benevolent it may be. Torquemada, as he carefully explained, was a most benevolent fellow.—I am, etc.,

Sunderland. A. KEFALAS.

Hospital Diets

SIR,—A short letter of mine in answer to the question raised in your columns apparently received notice in the daily press, with the result that I have received what I believe is called in film circles a "fan mail."

One letter was signed by all the patients in a ward of a certain hospital describing a menu which had not varied in four and a half months, and asking—very pertinently, I think—"What becomes of our bacon, butter, lard, eggs, *and sweets*?" Another describes a petition signed by inmates of the male and female wards of a sanatorium asking for more or better food, and the stopping of all ward entertainments as a punitive measure by the medical superintendent in consequence. This, I may say, was in England and not in Germany! There is one complaining that herrings are cooked and served "complete with heads, guts, and scales"; and describing an epidemic of diarrhoea among patients and nurses, who had the same food. There have been other complaints that "points" coupons are removed for a greater period than the patient's stay in hospital.

Apart from the question of adequacy, there would appear to be a need for closer administrative control to ensure better cooking and the supply to patients of rations to the full value of coupons removed from their ration books. I am surprised that any hospital should require the handing over of the personal "points" for the supply of sweets, as they cannot possibly be regarded as a legitimate part of the ration.—I am, etc.,

Brookwood, Surrey. H. M. STANLEY TURNER.

Contraception and Sterility

SIR,—Mr. Green-Armytage implies to your readers that the colleagues whose textbooks he quotes (Nov. 27, p. 691) are in agreement with his views on contraception and sterility. Yet actually these references are most moderate, and allude exclusively to the use of chemical methods, no mention being made of the other hydra-headed dangers which Mr. Green-Armytage senses in the practice of contraception. The chemical methods criticized are mainly of the "quinine" variety, which are, of course, not medically recommended; but even then the gravity of the charges seems to be limited to theoretical possibility. The following quotations include the *whole* relevant context.

J. H. Peel (Forsdike), p. 341: "It is claimed by some that the constant use of chemical contraceptives predisposes to subsequent sterility—without, however, very much positive evidence to support this claim."

Blair Bell, p. 336: "It is possible that the use of chemicals for contraception practised during a long period of time may lead to sterility, for we have known such a combination of circumstances; but it is difficult to assert that the sterility is a sequel to contraceptive methods."

Beckwith Whitehouse (Eden and Lockyer), p. 215: "Associated with the use of chemical agents is the important question of harmlessness of the preparation used. We have already referred to the irritant character of quinine and soaps upon the vaginal epithelium

Another aspect of the same problem is whether subsequent fertility may be impaired by their use, and whether ill effects are produced upon children that result from their failure. It is not beyond the bounds of possibility that a spermatozoon may suffer trauma from a chemical spermicide, and yet be capable of fertilizing an ovum. For these reasons the employment of mechanical contraceptives appears to us to be more desirable than chemical contraceptives, apart altogether from the greater reliability of the former."

One might have thought that a theory would be more discredited than upheld if this is the best corroborative evidence upon which it can be substantiated. Let us make no mistake. The control of excessive fertility has become an integral part of our present-day family life, and the medical practitioner cannot allow himself to take an ill-informed or biased view upon the subject. If there remains any serious medical concern about the bearing of contraceptive practices upon sterility, it will be essential to search for the facts in the only scientific way—viz., a statistical inquiry into the advent of pregnancy among couples who have and have not used previous contraceptive measures. This offer was made to Mr. Green-Armytage (Nov. 6, p. 587) with the opportunity of choosing the statistician, but apparently this way of seeking truth does not appeal.—I am, etc.,

London, N.W.1. JOAN MALLESON.

*** This correspondence is now closed.—ED., *B.M.J.*

Dentistry and Medicine

SIR,—I was surprised to find a letter in the *Journal* of Dec. 4 from a man qualified in medicine and dentistry agreeing with the view that there is little advantage in a dual qualification. Surely dentistry should be regarded as a specialty of medicine, and the same course should be done as in the other medical or surgical specialties? Mr. Waddy's argument leads logically to a demand for the abolition of the full medical course for the majority of specialties. However, as this is the realm of the revision of medical education I do not feel competent to pursue it further, except to state that by this I do not necessarily mean the courses as at present pursued by our future specialists.

How can a dental surgeon be described as an expert anaesthetist? As to his "considerable knowledge of medicine and surgery" I have seen little evidence of it. This "considerable knowledge" is picked up during all too brief attendances at lectures and clinicals, where usually little interest is taken in him by the teaching staff, who concentrate on the medical students—it being thought apparently that these are not essential subjects for the future dental surgeon.

I am inclined to agree with Mr. Waddy concerning American dentistry, but feel that many of our own dental surgeons would agree with the Americans' estimate of their own dentistry. From the little I have seen I would say that stress appears to be laid upon craftsmanship to the detriment of the surgical aspect.

Unfortunately most of the dentists' time is taken up, as Mr. Waddy states, with prosthetic work. I cannot help wondering if a more extensive course in physiology, bacteriology, and medicine might lead to an appreciation of Dr. Broderick's *Dental Medicine* with a corresponding decline in the amount of prosthetic work done.

Lastly, if Mr. Waddy sees little, if any, advantage in a dual qualification in ordinary civilian practice, I wonder how he would explain the correspondence columns in the dental journals on the vexed question of status except as a tacit admission of the inadequacy of the dental professional standing.—I am, etc.,

Haverfordwest, Pembs. D. STEPHENS PRICHARD.

SIR,—While it is true that the dental surgeon is, and must be for many years to come, chiefly occupied with technical procedures and the acquisition of a sound judgment in their execution, it is also true that there is a province which, because it lies on the borders of medicine and dentistry, has remained something of a "no-man's land." This made possible within our memory both the over-mechanically conceived and now obsolete type of unhygienic bridgework on the one hand, and that new massacre of the innocents, the wholesale extraction of teeth, on the other. It is the concern of both medicine and dentistry that what is important to both should be the special study of those who may know a little of both—the medically qualified dental surgeons. Indeed there is a strong case for postgraduate facilities in this sphere available to medical and dental graduates alike.

No one will deny the necessity for training dental students to a state of technical excellence, but unless a proportion of these were also educated to view the problems of dental disease from a wide scientific standpoint the future of dentistry would be black indeed. A profession which looked no further than the mechanical repair of the effects of disease would never attract students of high capability. There is certainly no prospect of dental caries becoming a rarity until the best brains availabile have been further applied to the problem and their conclusions translated into administrative measures. To suppose that such endeavour should not be a principal concern of dentistry is to take a very small view of that division of the healing art: a division which, opportunity provided, should offer the highest return in public benefit by prevention, and not just the meagre dividends of palliative repair and artificial substitution.—I am, etc.,

Basingstoke. MARTIN A. RUSHTON.

The Human Side of Medicine

SIR,—I hope that many of our Austrian colleagues will answer the quite unnecessary and entirely unjustified insult to Viennese doctors in the letter by Dr. Alan Maberly (Nov. 20, p. 661). My own slight experience of Viennese medicine under the Socialist regime gave me an altogether different impression, which has since been confirmed by working and exchanging views with many of Vienna's best doctors now working in this country.

It is clear that Dr. Maberly does not understand what is proposed for a socialized service, the duties of a doctor to-day, or the ideal relationship between doctor and patient. He may be able to perform the curious psychological process which he suggests I should try, and separate himself into a doctor and "official" and an individual. For me, as for most medical men, there is no such possible division; whether acting as an individual toward my fellow citizens, as a doctor toward my fee-paying patients, or as an "official" toward those whom I see in any official capacity, I am still, as all doctors would be in a system in which there were no longer any fees to be competed for, concerned with the life and health of the individual whom it is my privilege to assist.—I am, etc.,

D. STARK MURRAY.

Obituary

ROBERT WHILLIS, M.B., B.CH.CAMB., F.R.C.S.ED.

The following obituary notice of Mr. Robert Whillis, late of Kensington Terrace, Newcastle-upon-Tyne, has been written by Mr. W. Frank Wilson at the request of his colleagues:

It was with great sorrow that the many friends and colleagues of Robert Whillis learned of his death, which occurred on Nov. 20 at the age of 45, after a somewhat protracted breakdown in health from which we had fervently hoped that he would have made a complete recovery. This was not to be, however, and we are left to mourn the loss of one who was in the prime of life and whose personal charm and generous but sensitive nature won for him a deep respect and affection from all who came in contact with him, both in and out of school. Bob Whillis (as we all knew him) received his earlier education at Uppingham School, and a letter just to hand from the present head master of Uppingham, Mr. J. F. Wolfenden, states "it is clear from his record that he was a distinguished member of the school." He played in the school rugby XV in 1916 and 1917, was a praepostor and in the Modern Sixth; surely a good record to leave behind his school-days. Having decided to follow his father's profession, he entered Pembroke College, Cambridge, and graduated M.A., M.B., B.Ch. therefrom in 1925, having previously gained the diplomas of M.R.C.S., L.R.C.P. in 1923, and was admitted a Fellow of the Royal College of Surgeons of Edinburgh in 1925. Shortly after graduation he was appointed house-surgeon and, later, house-physician at University College Hospital and afterwards spent a useful period abroad in the Viennese clinics. On his return home he obtained the appointment of registrar to the ear, nose, and throat department of the Royal Victoria Infirmary, Newcastle-upon-Tyne, later being appointed

honorary assistant, and in 1940 was elected honorary surgeon in charge of this department, a post held for 20 years by his father, who had, in 1910, originated and devised the method of complete enucleation of tonsils with the guillotine—a method which has only to be mentioned in laryngological circles to arouse discussion and often a sharp division of opinion between those who can and the others who can't master and accomplish the trick of its technique.

Robert Whillis was a most capable and conscientious worker, never sparing himself and giving the best that was in him on behalf of the hospitals with which he was associated, his colleagues, and his patients. For fifteen years we worked together in almost daily contact, and no man ever had a finer partner and friend in the truest sense of what both should stand for. He played the game for the sake of the "team," which he would never let down if any effort of his could prevent it. Had he been spared to run a longer course his work and scrupulously upright example would have shed added lustre on the specialty in which he was so deservedly successful and upon the wider plane of medical life. He leaves behind him very pleasant and abiding memories of a dear and gentle spirit. To his widow and daughter and to his father and mother, we, his colleagues, take this opportunity of expressing our deep and sincere sympathy in their bereavement.

The death of Dr. FRANCIS BARKER will be deeply regretted by the many who knew him. A member of a well-known Scottish family and allied to others which have also achieved distinction, he was a man of fine physique and high intellectual capacity. At lawn tennis he was, as a young man, in the class of tournament players and he was a good golfer. He possessed a charming singing voice and was intensely musical besides being very well read. He specialized in gynaecology and obstetrics and in that capacity was for many years on the honorary staff of the Hospital of St. John and St. Elizabeth; he was also its medical superintendent. At the outbreak of war he became superintendent of the hospital at Ashridge Park and continued to work there till his health failed. A man of strong views and forcible personality he was loyalty itself to what he held to be right and to those who, in his opinion, followed the right, and he had a kind and generous heart. He leaves a dearly loved wife and daughter, and to them the sympathy of all his friends will go out in full measure.—V. B.

Universities and Colleges

UNIVERSITY OF OXFORD

Plastic Surgery Unit

As briefly announced last week (p. 768) the Nuffield Provincial Hospitals Trust, at Lord Nuffield's suggestion, has offered the University of Oxford £8,000 a year for ten years towards the cost of establishing and maintaining a plastic surgery unit. The University has accepted the offer and has appointed Mr. T. Pomfret Kilner as the first director of the unit with the title of Nuffield Professor of Plastic Surgery. The Radcliffe Infirmary will provide hospital facilities for the unit, and these will be supplemented by the Ministry of Pensions. The total of Lord Nuffield's direct personal gifts to the University of Oxford for the purpose of the development of the Medical School now amounts to £2,810,000. The new unit will be a centre for the training of plastic surgeons, and will work in close touch with the university laboratories in which parallel investigations of the biochemical and other problems connected with the growth and repair of tissue, fundamental to plastic surgery, will be carried on. The war has brought a greatly increased demand for the services of plastic surgeons, and Lord Nuffield's proposal was chiefly influenced by a desire to provide the best possible treatment for casualties, especially those suffering from disfigurement caused by burns.

UNIVERSITY OF CAMBRIDGE

The Board of Research Studies has approved Dorothy Stuart Russell, B.A., of Girton College for the title of the degree of Doctor of Science; Dr. Russell is also an M.A. of Oxford and an M.D. of London University. Winifred Ferguson Young, M.B., B.Chir., of Girton received the title of the degree of M.D. by diploma in November.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

The Council of the College has decided to proceed without delay to make an appointment to the Chair of Human and Comparative Pathology instituted under the gift recently made to the College by Mr. W. H. Collins. To this end a Board of Advisers has been appointed consisting of six members of the Council, and the President of the Royal Society, the Secretary of the Medical Research Council, the acting Regius Professor of Physic in the University of Cambridge, and Prof. J. Shaw Dunn of Glasgow. Details of the appointment are being considered and will become available at an early date.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

At the annual meeting held on Dec. 2 Dr. A. Fergus Hewat, F.R.F.P.S.G., F.R.S.Ed., was elected President, and Drs. Charles McNeil, L. H. F. Thatcher, A. Ninian Bruce, D. M. Lyon, W. A. Alexander, and D. K. Henderson were elected to form the Council for the ensuing year. Dr. D. M. Lyon was nominated Vice-President.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At a meeting of the Faculty held on Dec. 6, with the President, Mr. James H. MacDonald, in the chair, the following were admitted Fellows of Faculty:

Qua Physician: J. W. Affleck, M.B., Ch.B.; *qua* Surgeon: T. Fletcher, M.D., D.P.H., F. McD. Walker, M.B., Ch.B.

FACULTY OF RADIOLOGISTS

The following candidates have satisfied the Fellowship Board at the recent examination for the Fellowship of the Faculty: F. M. Abeles, M.D., D.M.R.E., W. Tennent, M.D., D.M.R.E.

The Services

Temp. Surg. Lieut. F. E. Fraser, R.N.V.R., has been mentioned in dispatches for steadfast courage and skill in a dangerous and important minesweeping operation.

The description of Surg. Cmdr. E. R. P. Williams, O.B.E., R.N., who was appointed a Commander of the Order of Orange Nassau for services to the Royal Netherlands Navy, is as now stated and not as published on Oct. 9 (p. 468).

The names of C. P. Miller, M.B., B.S., E. O. Pedersen, M.R.C.S. (deceased), and D. W. Quantrill, M.B., Ch.B., ship surgeons, appear in a list published by the *London Gazette* of those who have been commended for brave conduct when their ships encountered enemy ships, submarines, aircraft, or mines.

Surg. Cmdr. J. D. Simpson and Acting Surg. Cmdrs. H. L. Hoffman and E. H. Parkinson, R.N.V.R., have been awarded the R.N.V.R. Officer's Decoration.

Jemadar (Assistant Surg.) N. M. Nayar, I.M.D., has been mentioned in dispatches in recognition of gallant and distinguished services in the Middle East.

CASUALTIES IN THE MEDICAL SERVICES

Prisoners of War.—Capt. J. S. Hamilton-Gibbs, War Subs. Capt. C. Nairnsey, and War Subs. Capt. A. McN. Tomlinson, R.A.M.C.

Killed on Active Service.—War Subs. Capt. J. C. Seddon, R.A.M.C.

Died.—Lieut. N. Clarey, R.A.M.C.

DEATHS IN THE SERVICES

Capt. HUMPHREY BARRON THOMSON, M.B., R.A.M.C., who had previously been reported missing, is now officially recorded as killed in action on or shortly after Dec. 14, 1941. From the meagre accounts which have tardily filtered through from the Far East it appears that the 2nd Batt. of the East Surrey Regiment, to which he had been posted as regimental medical officer, was holding part of the border between Malaya and Thailand. The regimental aid-post of the East Surreys was attacked and wiped out by the Japanese in the early days of their invasion. The sergeant of the unit escaped and reported that Capt. Thomson was killed in this assault. Humphrey Thomson was the only son of Prof. and Mrs. W. W. D. Thomson of Belfast. Born in 1916 he was educated at Elm Park and Campbell College, Belfast. He went to the Queen's University and qualified M.B., B.Ch., B.A.O. in June, 1939. After six months in the Royal Victoria Hospital as house-physician and house-surgeon he joined the R.A.M.C. Shortly afterwards he volunteered for service in the Far East. On arrival in Malaya he acted as medical officer in the Military Hospital at Singapore, and later was posted to the East Surrey Regiment as medical officer. A correspondent writes: Humphrey Thomson was full of the joy of life, and his wit and humour, his high ideals of honour, his straightforward nature, his outspoken championship of what he considered right won the regard and affection of all his contemporaries, while his innate kindness of heart and his old-world courtesy endeared him to the older generation. During his short residence in hospital he showed great promise of a happy and useful life in the profession of his choice. Humphrey Thomson would have been the last to claim any brilliance of scholarship or profound book knowledge, but in the medical profession he found an ideal niche for his practical capabilities and shrewd common sense. His success was also due to the absorbing interest he took in his patients, whom he always regarded as men and women rather than mere "cases" and examples of various diseases. Subconsciously he obeyed the maxim of the great father of medicine—Hippocrates—"To a love of his profession

the physician should add a love of humanity." The same trait was exhibited as regimental medical officer, and his work among the ranks received high praise from his brother officers in the battalion. The exact events which happened in that far-distant regimental aid-post may never be known, but it is certain that Humphrey Thomson faced death with a smile on his face and words of cheer and comfort to the wounded and dying men of his battalion.

Medical Notes in Parliament

The White Paper

Mr. ROBERT MORGAN asked the Minister of Health on Dec. 9 whether it was still intended to produce a White Paper as to the proposals for the reformation of the medical service arising out of the recommendations of the Beveridge report. Mr. WILLINK replied that the White Paper was in preparation. He must have sufficient time to study closely the many difficult issues involved. For this reason it was not yet possible for the date of publication of the paper to be fixed, but there would be no avoidable delay. No new consultations were being initiated. The questions involved were important, complex, and delicate, so he must feel he could take real and personal responsibility for the proposals he would put forward to his colleagues. He was giving fresh consideration himself to matters on which Mr. Brown had given full consideration. He hoped the White Paper would be issued quite early next year. The House would then have an opportunity of debating it.

Infant and Child Mortality in Scotland

On Nov. 30 Mr. KIRKWOOD asked the Secretary of State for Scotland if he was aware that the rate of infant mortality since the last war among the poorer classes had, according to recent medical statistics, been the highest in the civilized world, and what steps he was taking in the matter. Mr. JOHNSTON: According to the latest information available to me the Scottish figures, bad as they are, are not the highest even among the nations of Western Europe. The causes of the variations in these infant mortality figures are not always apparent, but a report on the subject by a committee under Sir John Orr's chairmanship set up at my request by the Scottish Scientific Advisory Committee in June, 1942, will shortly be published.

Mr. GALLACHER asked if Mr. Johnston would consider calling a meeting of Scottish members and representatives of the local authorities to discuss this very serious question of health. Mr. Johnston said that that was one of the considerations to which he had been giving attention, but it was obvious, when he read the Orr report, that there were many causes contributing to these alarming figures. Dr. EDITH SUMMERSKILL: Will not Mr. Johnston agree that this question is accurate so far as it relates to children under 1 month old? Mr. JOHNSTON replied that he could not say that without notice.

Mr. KIRKWOOD also asked if the Secretary of State was aware that the child death rate in Glasgow was higher than it was in Tokio, and what immediate plans he had for the rehousing and rehabilitation of the workers in the Glasgow area to save the lives of the children. Mr. JOHNSTON: Figures for 1936 relating to the cities of Glasgow and Tokio are to the effect stated. But the official statistics published by the League of Nations show that, for the five-year period 1934–8, the infant mortality rate for the whole of Japan was half as high again as for Scotland. Bad housing is not the sole cause of a high infant mortality. Regarding the immediate provision of more housing beyond that already under construction, I can add nothing to the explanation given to Mr. Kirkwood on Nov. 11 by the Prime Minister.

Mr. KIRKWOOD: In that reply the Secretary of State for Scotland does not deny the statement made in the *British Medical Journal* that the death rate among children in Glasgow is worse than in Tokio. What steps is he going to take to remove this terrible and disgraceful situation in the West of Scotland? Mr. JOHNSTON: The figures for one year are as stated in Mr. Kirkwood's question, but over five years the figures for Tokio are 50% worse than in Glasgow. The steps we are taking to deal with this matter are, first, to find out what are the deficiencies in the way of homes, housing, and so on—to find out what are the causes of it. The Orr Committee was set up for this purpose, and the report is now in hand, and I expect it will be published.

Vaccination

On Nov. 30 Mr. WILLINK informed Mr. Viant that the policy of his Department on primary vaccination of adolescents and young adults remained as communicated to sanitary authorities in 1929 and referred to in the Chief Medical Officer's annual report of 1933, to the effect that it was not generally expedient to press for the primary vaccination of children of school age and adolescents in this country unless they had been in personal contact with a case of smallpox or directly exposed to smallpox infection.

The same day Sir JAMES GRIGG informed Mr. A. Edwards that, in the event of the failure of at least three attempts to vaccinate or revaccinate Service personnel, an entry was made in the records to the effect that such persons were in the opinion of the vaccinating officer insusceptible of successful vaccination. In the event of such persons contracting smallpox no specific instructions had been issued, but all the relevant facts concerning the case were recorded in the appropriate documents. Instructions had been issued that in all cases of unsuccessful vaccination the operation should be repeated until there had been three successive failures with calf lymph of known potency. The record of each failure was entered in the personal documents of the officer or soldier.

Sir James Grigg also told Mr. Viant that six deaths from encephalitis following vaccination or inoculation of soldiers had been reported to his Department since the outbreak of the war. Fifteen cases did not result fatally.

Emergency Medical Service

Sir E. GRAHAM-LITTLE was informed by Mr. Willink on Nov. 30 that the cost of the salaries, fees, and expenses of medical officers enrolled in the E.M.S. was at the rate of approximately £1,200,000 a year, and the number of medical officers receiving whole- or part-time salaries, which fluctuated somewhat from time to time, was about 1,550. Although the service had fortunately not been called upon to treat so many casualties as was at one time expected, it had been employed in caring for the numerous other classes of patients brought within the scope of the Emergency Hospital Scheme. Among these classes were large numbers of civilian sick transferred from town hospitals to outer hospitals having more adequate facilities for their treatment, and other civilian patients transferred from hospitals with long waiting lists. In the result the emergency scheme had greatly expanded the hospital facilities provided for the civilian population as a whole, and had made specialist medical skill available to much larger numbers of patients than ever before.

Views of Serving Officers

Sir E. GRAHAM-LITTLE asked whether the Minister of Health was aware of the successful protest made by the Federal Council of the British Medical Association against the nationalization of the medical profession in Australia on much the same lines as have been proposed for Great Britain in speeches by the ex-Minister of Health; and whether he would apply the argument put forward by the Australian Association also to this country, that it was unjust to make plans for the medical profession while many doctors serving in the Forces cannot make their views heard. Mr. WILLINK replied on Dec. 2 that he was alive to the importance of enabling doctors in the Forces to see for themselves what the Government proposals were and to discuss them and express views on them before legislation was undertaken. That was one of the objects of the forthcoming White Paper.

Nurses' Salaries Committee

Lady APSLEY asked on Dec. 2 whether the Minister of Health could make any statement about the Second Report of the Nurses' Salaries Committee and the action he proposed thereon. Miss HORSBRUGH replied that Mr. Willink had received the committee's second report from Lord Rushcliffe. It dealt with male nurses in hospitals, with nurses employed in the public health services, with nurses engaged in domiciliary work, and with trained nurses employed in nurseries. Mr. Willink was communicating with local authorities, the British Hospitals Association, and the Queen's Institute of District Nursing commending to them the recommendations as to salaries, emoluments, and conditions of service, and informing them of the grant which was payable, as in the case of the previous report.

Other White Papers

In the House of Commons on Dec. 7 the debate on the address in reply to the King's speech was resumed. Mr. BARNES moved an amendment dealing with post-war reconstruction and regretting that the Government had not yet reached definite decisions on the action to be taken this session to deal with social security as envisaged in Sir William Beveridge's report. Sir WILLIAM JOWETT, replying to the debate, said that the Government had covered a vast field of work in examining the Beveridge report. In many cases they confirmed Beveridge's conclusions, but they did not slavishly copy them. In many cases they had reached their own conclusions which, he thought, were better. He hoped to produce the White Paper early next year.

He begged those who had talked glibly about the Government having murdered the report, or buried or mummified it, or who had said that the Government's scheme was a thing of shreds and patches, to wait for the White Paper, because what they said was simply not true.

Mr. MANDER asked if there were not to be two White Papers, one on the State Medical Service and one more general. Sir W. JOWETT: Yes, two or more. There may be one on workmen's compensation. The White Papers, he added, were coming soon. The question of a comprehensive medical service was an additional cause for a White Paper. It was a matter of intimate concern, not only to hospitals, clinics, etc., but to the ordinary man or woman in the street—the little man who had so often no one to speak for him and no organization he could approach. They could begin to find out what he wanted or was thinking by using the non-technical language of the White Paper setting out the Government's scheme, and by having a discussion in the House of Commons, which represented everybody. The Minister of Health authorized him to say that the White Paper would be available shortly.

The amendment was withdrawn.

Tuberculosis in Belgium

On Dec. 7 Mr. FOOT told Mr. Oldfield that according to his information 109,511 supplementary ration books were issued in Belgium in Feb., 1943, to persons certified to be suffering from tuberculosis. Undoubtedly there had been a serious increase in the incidence of this disease since the German occupation. He could not accept the accuracy of the statement in the question that at least one-third of the young persons in Belgium and 30% of the school children in urban areas were suffering from tuberculosis. He had nothing to add to his former statements on the question of allowing more foodstuffs to be imported into Belgium.

Replying to a further question, Mr. Foot said he did not agree that the cases he had enumerated were the very worst. Under the system now prevailing in Belgium anyone might apply to his doctor for a certificate showing that he was suffering from tuberculosis. It was open to a doctor to give it, even if the suffering was only to a slight degree.

Deaths from Hunger in Greece

Mr. OLDFIELD asked on Dec. 7 if Mr. FOOT was aware that the deaths due to hunger in Athens and Piraeus had increased to 1,800 in October. Mr. FOOT pointed out that precise figures of deaths in Athens and Piraeus during October were not yet available. In the opinion of the Swedish supervisors of the relief scheme the figure of 1,800 deaths resulting from starvation or undernourishment was certainly incorrect. It was possible, however, that the total of deaths from all causes during October was in the neighbourhood of 1,800. The scale of the relief sent to Greece was constantly under consideration, but he was not prepared to add to his previous statements on this subject. Mr. Foot added that if the figure he had given was correct, it showed a substantially smaller number of deaths in Athens and Piraeus than in October last year, and considerably smaller than the year before.

Serving Officers' Views on White Paper

On Dec. 7 Sir JAMES GRIGG informed Major Nield that he was not aware of any approach having been made to members of the medical profession now serving in the Army to ascertain their views on the question of a State Medical Service. When the White Paper on the subject was issued he would facilitate arrangements whereby their views might be expressed. He could not say off-hand whether he would do this by Army Council Instruction or Army Order.

Help for Doctors in Civilian Practice

Replying on Dec. 9 to Sir Leonard Lyle, Mr. WILLINK said the need for supplying the Forces with the doctors which they required must in certain areas cause some inconvenience to the public, although every effort to mitigate this was made in selecting the individual doctors for recruitment. In any case arrangements were made to secure that essential medical attention would be available. The Service Ministers had always been ready to give what help they could from their medical departments. In the present epidemic they were co-operating in special arrangements under which their medical officers would give as much help as their essential Service duties permitted to general practitioners, factory doctors, and hospitals in urgent need. Medical officers of health were being asked to take the initiative in putting into operation the arrangements affecting general practitioners and factory doctors. Doctors requiring help would apply in the first instance to the secretary of the Local Medical War Committee. The corresponding applications from hospitals would be made to the hospital officers. He understood that a suggestion for pooling medical officers of the Services had been explored by the Medical Personnel (Priority) Committee. The committee recommended that co-operation between the medical departments of the three Services, already carried out to a considerable extent, should be developed to the highest possible degree, but they felt that complete pooling would not be practicable.

University Grants Committee

On Dec. 7 Sir JOHN ANDERSON informed Mr. Harvey that he had increased to 15 the number of members of the University Grants Committee in order that their advice on the important problems that lay ahead might be based on the widest range of experience. Before the war the committee numbered 10, but had been reduced by deaths and resignations to 5 immediately before the appointment of the new members. Arrangements were being made to hold the first meeting of the new committee at an early date.

In a further reply Sir John said that the rule precluding those in the employment of universities from being members of the committee had been changed.

Medical News

The office of the British Medical Association will be closed from 4 p.m. on Friday, Dec. 24, until 9 a.m. on Tuesday, Dec. 28.

The Institute for the Scientific Treatment of Delinquency has arranged a university extension course of twelve lectures on the Freudian theory of delinquency by Mrs. Kate Friedlander, M.D. It will begin on Saturday, Jan. 8, at 2.30 p.m. at 17, Manchester Street, W.1. Fees: for the course £1; for single lectures 2s.

The first issue of the *British Journal of Industrial Medicine* is to be published in January, 1944, under the editorship of Dr. Donald Hunter. It will appear quarterly, and those wishing to take out a subscription should apply to the Secretary of the Journal Board, B.M.A. House, Tavistock Square, London, W.C.1. A year's subscription is £1 5s., or £1 for members of the B.M.A. Single copies cost 7s. 6d. All editorial communications should be sent to Dr. Hunter at the London Hospital, London, E.1.

The *British Medical Bulletin*, which is published monthly by the British Council for oversea distribution, is devoting its January, 1944, issue to a symposium on penicillin. Several of those who have taken a leading part in work on penicillin are contributing short review articles, and there will be abstracts of all the important British papers on penicillin which have been published between the years 1929 and 1943. There will also be a bibliography of relevant papers not abstracted. Although the *Bulletin* is not normally available in the United Kingdom, a small number of extra copies will be printed for any members of the medical profession resident in this country who would find this special number useful. Applications for a copy should be addressed to the British Council at 3, Hanover Street, London, W.1, and should be received not later than Wednesday, Dec. 22. A charge of 1s. per copy will be made, but no money should be sent with orders, as the number available will be limited.

Manuscripts and published articles submitted for the 1943 Charles L. Mayer prize are being received by the National Science Fund of the National Academy of Sciences, 515, Madison Avenue, New York 22, N.Y. The closing date for the receipt of contributions is Jan. 15, 1944. The award will be made for an outstanding contribution to present-day knowledge of factors affecting the growth of animal cells with particular reference to human cancer.

The High Commissioner for India is reported in the *Times* to have stated that medical supplies, including a million capsules of halibut-liver oil, are to be sent by aeroplane to combat epidemic disease in the famine districts of India. He said that thanks to the prompt and energetic action of the Viceroy the food crisis in Bengal and other parts is being tackled vigorously and food is arriving to relieve distress. The most serious need now is for medical supplies and organizations for after-care of the people who have undergone so much suffering. The situation is gradually improving.

The name of Dr. R. P. Brittain, ship surgeon, appears in a list published by the *London Gazette* of those who have been commended for brave conduct when their ships encountered enemy ships, submarines, aircraft, or mines.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* the number of deaths attributed to influenza rose from 106 to 375 in the great towns; notifications of pneumonia rose by 669. (For the week ending Dec. 4 influenza deaths numbered 709 and notifications of acute pneumonia 2,291.) Scarlet fever was up by 59, and diphtheria by 27; and whooping-cough was down by 66, measles by 38, and dysentery by 29 cases.

The rise in the influenza deaths was general throughout the country but most noticeable in the northern towns. The cities with the largest number of deaths were: Manchester 44, London 29, Birmingham 20, Bristol 18, Bradford 17.

The notifications of pneumonia have been more than doubled during the past fortnight, and the total was the largest for any week since the early spring of 1941. The increase in pneumonia followed a similar distribution to that of influenza—a general rise but more marked in the north. The largest rises during the week were in Lancashire, 143 more cases, Yorks West Riding 86, London 48, and Durham 46 more.

In only a few counties was there any wide variation in the trends of the infectious diseases of childhood. There were 45 more cases of scarlet fever in Middlesex and 35 more in Yorks West Riding. There was an increase of 13 in the notifications of diphtheria in the Port Health Districts. The largest decline in measles was in Cambridgeshire by 28, and whooping-cough in Lancashire by 60; the latter disease tended to be more prevalent in the south.

Notifications of dysentery remained steady at 147. The chief centres of infection were London 26, Middlesex 21, and Lancashire 19, these three areas contributing almost half of the total cases.

In *Scotland* there were rises in the notifications of scarlet fever by 46, acute primary pneumonia by 28, measles by 17, diphtheria by 13; the incidence of dysentery fell by 15 and that of whooping-cough by 8. The rise in scarlet fever was confined to the western area. Of the 65 cases of measles 52 were notified in Glasgow.

In *Eire* the incidence of diphtheria fell by 43. The increase in infantile enteritis and diarrhoea was due to the experience of Dublin C.B., where 61 of the 70 cases were recorded.

Public Health in Eire, 1941

The annual report of the Department of Local Government and Public Health shows that the decline in the incidence of infectious diseases was continued in 1941. The statistics for the principal notifiable infectious diseases are:

Disease	No. of Notifications		No. of Deaths	
	1941	Average of 1936–40	1941	Average of 1936–40
Typhus fever	25	8	6	2
Typhoid fever	284	318	38	52
Diphtheria	1,447	2,410	165	275
Scarlet fever	2,318	3,816	32	92
Puerperal infection	99	104	27	54
Total	4,173	6,656	268	475

The 268 deaths were the lowest ever recorded for these diseases. The incidence of tuberculosis, which had been rising slightly since 1938, showed another small increase. There were 2,882 deaths from pulmonary tuberculosis—25 fewer than in 1940; but non-pulmonary tuberculosis, with 829 deaths, was 51 in excess of 1940. The increase was due to the unfavourable experience of the rural districts; 2,188 deaths from all forms of tuberculosis were registered in these areas in 1941, compared with 2,094 in 1940. In the urban areas an improvement was recorded, the deaths falling from 1,591 in 1940 to 1,523 in 1941.

The Week Ending December 4

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 2,694, whooping-cough 1,757, diphtheria 610, measles 451, acute pneumonia 2,291, cerebrospinal fever 60, dysentery 144, paratyphoid 2, typhoid 8. Deaths from influenza in the 126 great towns numbered 709—an increase of 334.

Radiotherapy for cancer cases is to be provided at Mount Vernon Hospital, Northwood, and Warren Road Hospital, Guildford (Ministry of Health Circular 2878). The former is already receiving patients from Sectors II, III, IV, and V, while the latter is ready to receive patients from the remaining Sectors. Applications, which should be made through the Sector Hospital Officer on form E.M.S. 116, should be accompanied by adequate case records (for which a special form, E.M.S. 221, is available) and any pathological and *x*-ray reports, with slides and films if possible.

No. 47

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Nov. 27.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London) (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1943					1942 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	43	3	30	6	—	77	4	27		9
Deaths		2	—				—	2		
Diphtheria	732	47	188	92	45	861	39	228	97	12
Deaths	15	1	2	2	—	17	—	4	5	—
Dysentery	147	26	44	—	2	163	15	65	—	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	4	—	2	—	—	1	—	1		—
Deaths		—					2			
Erysipelas			57	9	—			67	9	—
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				70					42	
Deaths	39	5	15	6	7	36	5	19	20	2
Measles	518	49	65	30	3	10,649	307	456	33	43
Deaths	—	—	—	—	—	10	1	2	—	—
Ophthalmia neonatorum	75	2	13	—	—	82	5	22		2
Deaths										
Paratyphoid fever	2	—	1	—	—	4	—	3	—	1
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal*	1,647	121	65	1	1	766	51	13	3	11
Deaths (from influenza)	375	29	43	8	5	35	7	3	—	—
Pneumonia, primary			326	13				216	10	
Deaths		98		14	19		—		16	13
Polio-encephalitis, acute	1	—				6	—			
Deaths		—					—			
Poliomyelitis, acute	13	2	1	3	—	18	—	—	5	4
Deaths		—					—			
Puerperal fever		1	18		—		—	14		—
Deaths		—					—			
Puerperal pyrexia†	166	7	16	2	1	161	11	21	—	1
Deaths										
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	3,157	240	402	30	94	2,970	148	401	61	68
Deaths	5	—	—	1	—	2	—	1	—	—
Smallpox	—	—	1	—	—	1	1	3	12	—
Deaths		—	—	—	—		—	—	—	—
Typhoid fever	—	—	3	7	5	13	—	—	12	2
Deaths	—	—	—	—	—	—	—	—	1	—
Typhus fever	—	—	—	—	—	—	—	—	1	—
Deaths				—	—				—	—
Whooping-cough	1,800	163	225	38	29	1,263	75	52	35	5
Deaths	16	3	4	—	1	13	2	3	1	—
Deaths (0–1 year)	394	44	81	31	34	309	40	71	52	19
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	6,863	1,055	793	221	172	4,508	703	615	212	141
Annual death rate (per 1,000 persons living)			17·9	14·5	‡			13·8	14·2	‡
Live births	5,635	709	807	410	260	5,576	675	789	363	256
Annual rate per 1,000 persons living			16·5	27·0	‡			16·3	24·2	‡
Stillbirths	191	18	36			188	7	36		
Rate per 1,000 total births (including stillborn)			43					44		

* Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

† Includes puerperal fever for England and Wales and Eire.

‡ Owing to evacuation schemes and other movements of population, birth and death rates for Northern Ireland are no longer available.

Letters, Notes, and Answers

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ANY QUESTIONS?

Cold Extremities

Q.—*For the last two years I (60 years old) have suffered from coldness of the ears and hands. The sensitiveness to cold is very marked and results in chilblains either on the fingers from resting them on cold desks and chairs, or on the ears from what I take to be the draught from driving in a motor car. The ears become so cold that they ulcerate on the upper part of the pinna and I am forced to cover them in some way. Probably there is some deficiency, but I cannot trace it to any vitamin or endocrine gland deficiency. My feet feel the cold too, but they are covered most of the time. At times there is a sensation of tingling in them which is most marked. Can it be a gouty tendency?*

A.—The onset after age 60 of chilblains of the extremities and ulceration of the ears on exposure to cold is suggestive of arteriosclerosis. The urine should be examined for sugar and the blood for the Wassermann reaction. If the condition is due to sclerosis of the peripheral vessels no curative treatment is likely to be effective, and reliance should be placed on protection from cold, as by gloves, Balaclava helmet, car heater, etc. Operations on the sympathetic nerve supply are probably not indicated at this time of life, but a small dose of thyroid, gr. 1/2 t.d.s., might inhibit the undue reaction to cold. Nicotinic acid may also be of value; as little as 10 to 50 mg. daily by mouth may be effective, but the dose should be worked up, if necessary, to 500 mg. a day until relief is obtained or the effects become unpleasant. No other vitamin or endocrine therapy seems promising, and the symptoms are not suggestive of gout.

Progesterone for Menorrhagia

Q.—*At what stage of the menstrual cycle should corpus luteum (tablets) be administered to check climacteric menorrhagia in a nullipara? In what dosage?*

A.—Corpus luteum hormone is inactive when administered by mouth, and corpus luteum tablets, therefore, even if they contain progesterone, do not affect menstrual function. If progesterone is given for menorrhagia, it should be given by daily intramuscular injections of 5 mg. for three or four days before the expected onset of the period, and for the first one or two days of the period. If the bleeding is not cyclical but occurs irregularly and persists for long periods of time, withhold treatment until the bleeding is in progress, and then give it daily for seven days. As an alternative, and if oral therapy is required, ethisterone 10 mg. t.d.s. may be employed. This substance is active by mouth, and, although chemically different from progesterone, has a similar, if less potent, action on the uterus.

Alkalosis

Q.—*What exactly is alkalosis? Under what conditions does it occur? How is it recognized? And what is the treatment?*

A.—A state of alkalosis exists when some change has occurred in the blood chemistry which, if uncompensated, would tend to make the blood alkaline. Thus it may be produced by an excessive loss of acid from the body or an increase in the bicarbonate of the blood above the normal level. The term is an unfortunate one because it suggests that there has been a rise in the *p*H of the blood, whereas in fact a very small deviation from the normal is sufficient to cause death. This compensation is effected by the buffer systems of the body, which enable acids and alkalis to enter the circulation without bringing about a change in *p*H unless an overwhelming amount is present.

Alkalosis occurs in high intestinal obstruction, the severe and protracted vomiting leading to excessive loss of chlorides from the body with a resulting rise in the bicarbonates of the blood. Alkalosis also occurs from alkaline therapy in peptic ulcer should the renal excretion of bicarbonate fail to keep pace with the rate of administration of alkali by mouth. The incidence is as high as 20–30% of cases on doses of 60 to 160 grammes daily of alkali expressed as sodium bicarbonate, but falls to 2–3% on doses of 20 to 30 grammes daily. Overbreathing in mountain sickness, post-encephalitic states, and some cases of hysteria washes out carbon dioxide from the blood and leads to alkalosis by decreasing the quantity of carbon dioxide relative to the blood bicarbonate.

Alkalosis is recognized clinically by drowsiness, headache, signs of severe dehydration, anorexia, furred tongue, nausea, excessive dryness of the mouth, numbness and tingling of extremities, tenderness of the muscles, stiffness in the limbs, and slow breathing. Tetany may supervene. The bicarbonate content of the plasma is usually raised, but this is not the case in alkalosis from overbreathing. The blood urea is usually elevated and the urinary ammonia diminished. Paradoxically enough the urine is not necessarily alkaline.

Treatment is first to remove the cause. Hyperventilation can often be checked by sedatives or by inhalation of an atmosphere containing 5% CO_2. Alkalis should be stopped in peptic ulcer and feeds be salted generously. In severe cases large quantities of normal saline may need to be given intravenously. An injection of 10 c.cm. of a 20% solution of calcium gluconate will relieve tetany. Treatment by acidifying agents such as ammonium chloride is not advisable, as they increase the dehydration and the patient may quite suddenly swing from alkalosis to acidosis.

Paroxysmal Auricular Fibrillation

Q.—*A woman aged 75, with good family and personal history, has had symptoms of heart trouble for 8 or 10 years. It appears to be auricular fibrillation, the attacks coming on at intervals, some long. A presystolic murmur was once heard. In the past year general failure of health and activities noticed. The last attack seemed serious, but passed off. Two days' rest with digoxin (2 tablets daily, 25 mg.) has brought her back nearly to her usual condition. Has coramine or strychnine any place in the treatment of this case?*

A.—It would seem desirable to have electrocardiographic records of the heart both during and between the attacks to be certain of the nature of the disturbance of rhythm. If the attacks are paroxysms of auricular fibrillation and last only one to two days, it is possible that small doses of digoxin will do more harm than good. Digitalis preparations are usually advisable only if the attacks are of longer duration and threaten to produce cardiac muscle failure. They should then be used in full dosage—i.e., digitalis pulverata gr. 1½ 4-hourly for three days, and then less frequently according to the effect produced. Quinidine might be more helpful early in the attacks, 4 gr. every two hours until the attack vanishes. As a rule only two or three doses should be necessary for this purpose, and it would probably be undesirable to exceed a daily dosage of 20 gr. at this age. Rest and sedatives, such as phenobarbitone gr. 1/2 t.d.s., would seem more appropriate than stimulants such as strychnine. Coramine (nikethamide *B.P.*) is a medullary stimulant; it is used particularly in respiratory failure—e.g., after anaesthetics—and it has no place in the treatment of paroxysmal fibrillation. Oxygen by a comfortable mask such as the B.L.B. would also be of value in the attacks. As they occur at relatively infrequent intervals, prophylactic treatment with quinidine is probably not called for, but regular administration of a small dose of phenobarbitone might be of value.

Calcium for an Infant

Q.—*What are the daily calcium requirements of a child aged 16 months, of average weight and in good condition? Milk, and anything made with it, is disliked, and the daily intake is only 2.6 oz. Until 1 year old the child sometimes took as much as 3/4 pint a day, and had a bigger appetite than at present. Powdered calcium, gr. 7½, with vitamin D, was often taken daily in food, but lately such meals have been refused, apparently because the calcium renders the food unpalatable. Rose-hip syrup and cod-liver-oil emulsion are readily taken. Eggs are available, and the child likes them. Only small meals are eaten—e.g., one egg, one dessertspoon of cooked potato, and three or four teaspoons of spinach are an average dinner. First teeth were cut at 5 months; the child had 8 teeth at 10 months, and is now just beginning to cut the first molars.*

A.—One gramme a day of calcium is the desirable intake for a child of 16 months. It would undoubtedly be difficult to get anything like this intake of calcium on the type of diet a child of this age could take unless much more than 2½ oz. of milk is drunk, as green vegetables or cheese are really the only other good sources of calcium in a mixed diet. It looks, therefore, as if artificial methods may have to be resorted to in this case. Clearly the best way would be in the form of calcium phosphate. There is a proprietary product, put up in tablets each containing 5 gr. of calcium phosphate, equivalent to 1.7 gr. of calcium. But even with the help of these it would be difficult in this case to make up a reasonably good calcium intake. There does not appear to be anything wrong with the calcium metabolism of the child so far as the dental evidence shows, but it would be well to try to get a good calcium intake now. It would be a good plan to increase the vitamin D intake, so that better utilization of calcium in the diet is ensured. Probably fish-liver oil, giving up to 800–1,000 i.u. of D per day, would help.

National household milk contains as much calcium as fresh milk. This could be used in making all kinds of milk dishes. Another tip is that children who dislike drinking milk will often readily take junkets. The analytical figures for milk are (per lb.):

	Protein g.	Calories	Calcium mg.	Vit. A i.u.	Vit. B_1 mg.	Riboflavin mg.
Fresh milk ..	15	281	544	530	0.2	0.79
Whole-milk powder	116	2,168	4,060	4,870	1.37	5.76
National household milk powder ..	162	1,502	5,557	130	1.77	9.07

The advantages of using household milk powder are that, in addition to being a good source of calcium, it provides good protein and riboflavin.

Occupational Dermatitis

Q.—*Recently I had to give evidence in court in a case of occupational dermatitis. Counsel asked me if the attack of dermatitis already contracted had rendered the workman more than usually liable to a further attack. I answered that it had done so. Later I came to the conclusion that extra susceptibility may be only temporary, on the following grounds: (a) By analogy: As a student I contracted severe dermatitis of hands and fingers through contact with antiseptics. For many years I have had no dermatitis, although my hands are often in contact with antiseptics. In drug eruptions (iodides, etc.) desensitization can be obtained by appropriate doses of the drug. In allergic manifestations desensitization may be obtained by calculated doses of the protein or substance concerned. (b) Anatomical: The epidermis is always being shed and renewed. Surely a time must come when an entirely new epidermis has formed which has the resistance of the pre-dermatitis skin?*

A.—The risk of recurrence of dermatitis varies with (*a*) individual susceptibility, which may be affected by (*b*) number of previous attacks; (*c*) causal irritant; (*d*) the severity of the attack or attacks. Certain primary skin irritants seem more liable to give risk, on resumption of contact or exposure, to a recurrence. Notable examples in this class are teak wood dust, certain chemicals—e.g., dinitrochlorbenzol and tetryl, and formaldehyde-containing materials. Each additional attack of dermatitis renders the sufferer more susceptible, not only to the primary irritant but to others in addition, and sometimes a susceptibility is developed to contact with materials which do not ordinarily cause dermatitis. Apart from individual susceptibility, the chance of recurrence varies directly with the severity and duration of the primary or subsequent attacks of dermatitis.

My comments on the questioner's views are that his experience of one severe attack of localized dermatitis after contact with a skin irritant, with no recurrence on further exposure, has fortunately also been the experience of a large number in industrial occupations. Desensitization as a means of preventing recurrence of industrial dermatitis has not in this country proved a success. The horn cells of the epidermis, together with the products of the sweat and sebaceous glands, constitute the skin's anatomical defence against dermatitis, which being an inflammatory process (thus dependent on the presence of blood vessels) can originate only in the corium below. Although there will be regeneration of the epidermal horn cells after an acute inflammatory condition, these new horn cells may be no better in resistance to skin irritants than their predecessors, and may even be less so. On the matter of regeneration there is no doubt that diet and nutrition play an important part.

Finally, I should like to emphasize the importance after an acute attack of dermatitis of a definite period for the convalescence of the skin, which should date from the apparent local recovery.

Emulsifying Agents

Q.—*From time to time references are made to new ointment bases containing emulsifying agents. These are supposed to allow better contact between the active ingredients and the skin and at the same time be easier to remove. I have also read of cleansing agents to aid in the getting rid of greasy preparations applied to the skin. Little or no mention is made of these matters in textbooks on dermatology, and I should like to know what at present are the best ointment bases and cleansing agents, and whether they are recommended for routine use or only for special purposes.*

A.—Nearly all ointment bases in use to-day are immiscible with water. Their reaction to exudate and to skin contours is a physically resistant one. If an emulsifying agent is present then free interchange of therapeutic content between vehicle and tissue is to be expected. Contact becomes intimate and penetration follows. The presence of emulgent enables the removal of ointment by water rather than by oils (paraffin, olive oil, etc.). A number of emulsifying agents—e.g., lanette wax, Halden's emulsifying base, triethanolamine stearate, and cetal—are available. The *British Pharmacopoeia* will, in the near future, include a high proportion of "emulsion bases." In the greater proportion of diseases of the skin such bases are preferable from both economic and cosmetic aspects. Such bases, apart from other properties, encourage free dispersal and rapid absorption of incorporated medicament. Occasionally an emulsifying base is to be discouraged, since it may increase the detergent effect of soap and water by rendering natural skin fats more accessible thereto. Much research is now devoted towards the provision of cleansing creams which do not "degrease" but leave, after use of an acid, "oil in water" emulsion on the skin. This approximates to Nature's normal barrier—a bacteriological protective film not wisely interfered with.

Epidemic Infective Hepatitis

Q.—*According to the leading article in the* JOURNAL *of Nov. 27 jaundice has become much commoner during this war, and the tendency to diagnose cases as catarrhal jaundice is diminishing. If the prevalent variety is infective, what steps should a practitioner take to prevent the spread of infection, if there is indeed any risk of this? For example, at what stage of the disease is the patient infectious, how long does this last, and how is infection conveyed from one person to another?*

A.—It is true there has been a great increase in jaundice since the war, not only among the troops but also among civilians, in particular school children and young adults. Most cases are examples of "infective hepatitis," which is now regarded as a more suitable term than "catarrhal jaundice" for this particular disease, because it is infectious and it primarily affects the liver cells. It does not begin as a catarrh of the duodenum and large bile ducts as used to be thought, and the jaundice is due to *intrahepatic* obstruction to the secretion of bile. Important points to remember about this infectious disease are the long incubation period (3 to 5 weeks), the pre-icteric stage of several days to a week or more, the direct droplet spread, and the tendency for familial cases to occur in chains and not in groups. The patient is most infectious in the pre-icteric stage, and probably ceases to be infectious after the jaundice appears. During epidemics, patients with anorexia, pains in the back or limbs, headache, and particularly nausea and vomiting with pain or tenderness over the pit of the stomach and the liver, should be suspect and immediately isolated. In school outbreaks any child who vomits should be sent home for 7 days and allowed to return only if no jaundice has developed. Ancillary diagnostic tests in the early stage of infection are bile-salts or pigment in the urine, a leucopenia with lymphocytosis, and evidence of liver dysfunction (positive van den Bergh or Takata-Ara reaction). *Formes frustes* are probably common, and they may supply the missing links in the epidemic chain. Obviously control presents many difficulties; fortunately the infection is not as a rule severe, but adult patients in particular must not be allowed to return to work until the jaundice has quite gone.

Other forms of jaundice more frequent since the war began are the post-arsphenamine jaundice in syphilitic patients and the so-called homologous serum jaundice which has followed (after an incubation of 2 to 4 months) the injection of certain batches of human serum given with yellow fever vaccine or as convalescent measles or mumps serum for protection against these diseases. Clinically the jaundice is similar in type (though fatal cases are less rare) to that of infective hepatitis, but does not seem to be infectious. Spirochaetal jaundice, spread from the rat by contamination of ponds and canals, mines, sewers, etc., is typically a more severe infection, but milder grades occur; a leucocytosis is a distinguishing feature from infective hepatitis.

Psoriasis

Q.—*Psoriasis is thought by some to be an allergic disease, and there is no specific remedy for it, but some preparations relieve it for a time. I have found stilboestrol one of these, and it would seem to cure the rheumatism which is sometimes associated with the condition; but the cure is short-lived, and I would like to know of an analogous preparation which might last longer and give more complete relief.*

A.—Some thirty years ago a millionaire, a victim of psoriasis, provided funds to endow a team of experts to discover the cause of this common and intractable skin disease. The investigations were profound and searching, but the experts failed. Their chief conclusion—that a limitation of the nitrogenous intake benefits psoriasis—is not now even considered. Then in recent years Grutz and Berger asserted that there was both a general and a local disturbance of the fat metabolism in psoriasis. Dodds, MacCormac, and Robertson (*Brit. J. Derm. Syph.*, 1942, **54**, 212), repeating these experiments, were unable to observe any constant or definite improvement on a low-fat intake, or, conversely, an aggravation of the eruption on a high-fat diet.

Indeed, in all fields of research psoriasis has proved a veritable will-o'-the-wisp, and we have reluctantly to admit that we are still quite ignorant of its cause. There are therefore no grounds for describing it as an allergic disease, nor any constructive scientific principle justifying the employment of stilboestrol, except clinical observation, which is a complete answer until, or unless, it is disproved by contrary experience. This applies with more or less force to all these methods of general treatment—by arsenical medication, by injections of bismuth or mercury, by protein shock, and so forth.

The treatment of psoriasis is therefore mainly or exclusively the treatment of the eruption by external applications. Of these the most active is chrysarobin, in a 6 to 8% ointment, which, however, should be employed with certain reservations. First, it cannot be used above the neck; secondly, it produces conjunctivitis if it gets into the eyes; thirdly, it stains sheets and clothing permanently; fourthly, it should be used only under careful and continued supervision, preferably keeping the patient in bed. Tar and mercury are also frequently employed, as in Adamson's formula: ammoniated mercury 10 gr., liquor picis carbonis 1 drachm, and vaseline to the ounce. Or oil of cade 1 to 2 drachms in salicylic acid ointment one ounce. Success depends upon the vigorous and thorough application of the remedy. Ultra-violet irradiation clears up the eruption in many cases, the patient appreciating the freedom from grease and the shifting of the responsibility for treatment to another. Small doses of *x* rays are also used in suitable cases—for example, an eruption limited to the elbow. But the cumulative effect of this form of treatment must always be kept in mind, and it should therefore never be used except under expert supervision and by a practitioner fully versed in superficial radiotherapy.

Enlarged Prostate

Q.—*Is there evidence that methyl testosterone is of value in the treatment of early prostatic enlargement? Is such treatment worth while, bearing in mind the possible carcinogenic factor of the hormone, and, if so, over what period should dosage be continued?*

A.—There is a good deal of experimental evidence that benign hypertrophy of the prostate is of endocrine origin. There is some clinical evidence that the administration of androgens may arrest further development of hypertrophy of the middle lobe, but on the whole the treatment of the enlarged prostate with androgens has been disappointing. At any rate it would seem that the first essential of such treatment is adequate dosage, and it is doubtful whether this would be obtained with the doses of methyl testosterone by mouth which are now popularly employed. The usual procedure, if androgen therapy is decided upon, is to give injections of, say, testosterone propionate 25 to 50 mg. (or even more) weekly for 3 or 4 months, and if no relief is obtained to consider the possibilities of surgery. The cancer bogy has been raised frequently in the course of discussions on oestrogen therapy. So far as is known androgen has up to the present not been accused of being a possible precancerous agent.

INCOME TAX

Income from New Zealand

"F.R.C.S." raises two points in connexion with this income: (*a*) the inspector of taxes suggests that he should drop his claim to Dominion income tax relief, if only the net amount of the income (i.e., after deducting New Zealand income tax) is assessed to British tax; and (*b*) whether he is liable to account for tax on that portion of the income which accrues in New Zealand but cannot be remitted to this country owing to Government restrictions.

*** (*a*) We distrust these short cuts. The result for the year in question might not differ much—that depends on various facts; but the only safe way is to claim what the law gives—i.e., the Dominion income tax relief. (*b*) He is liable in law, but if payment of tax on the unremitted portion of the income would impose hardship—as it very well may do—we understand that collection of that tax can be held over to be dealt with as and when the income withheld is in fact remitted.

Expense of Travelling to London

"A. H." inquires whether expenses incurred in travelling to London for (*a*) meetings of the Royal Society of Medicine and (*b*) attending hospitals for postgraduate instruction are allowable.

*** No; it would, we believe, be held that such expenses are not incurred in the carrying on of professional work, but in raising the standard of professional ability and knowledge.

Deduction for General Expenses

"SIGMA" has a small specialized practice for which he uses a consulting-room (exclusively) and the dining-room as a waiting-room. The maid acts as receptionist and attends to the telephone. (He is also part-time assistant in another practice, but this does not affect the question raised.) The house is assessed at £70 per annum. What would be a reasonable allowance from the profits of the practice?

*** So far as the rent, rates, etc., of the premises are concerned, we would suggest, say, 20% as a fair charge. The proportion of the maid's time is difficult to deal with as it depends on the amount of work she has in connexion with the private practice. "Sigma" can probably make an estimate as to the proportion of her time spent on that work. No allowance is due in respect of the part-time assistant work unless the principal requires "Sigma" to maintain a consulting-room for the purposes of his (the principal's) practice.

LETTERS, NOTES, ETC.

Atmospheric Pollution with Cement Dust

Mr. P. G. BOWIE (Cement and Concrete Association) writes: My attention has been drawn to Mr. D. W. Standley's letter (Nov. 13, p. 622), and while I appreciate his point that too close an association between housing and industry may not—on account of noise, atmospheric pollution, or for other reasons—be desirable, I would ask that any statement concerning cement manufacture which is published in a journal of such high standing as your own should be based on fact. Cement is not powdered until after it has left the kilns, consequently cement dust does not pour out of the chimneys. What is often visible is the cloud of steam evaporated from the wet clay from which the cement is made. Flint dust is not used in the manufacture of cement, and you may be certain that having gone to the expense and trouble of making and then crushing the cement to powder the manufacturers do all in their power to minimize any loss of material.

Pleuro-pericardial Rub

Dr. W. TREVOR COOKE (Birmingham) writes: The signs and symptoms given in the question "pleuro-pericardial rub" (Oct. 23, p. 533) are very similar to those described by Hamman (*Johns Hopk. Hosp. Bull.*, 1939, **54**, 1). He called attention to the significance of previously recorded cases, and reported 7 cases under the term of "spontaneous mediastinal emphysema." The condition is benign and is frequently confused with coronary thrombosis owing to the intense pain and collapse that may be present, and with pericarditis due to the auscultatory findings. Six of Hamman's cases were under the age of 35. In view of the ease with which the diagnosis may be confused with more serious conditions, spontaneous mediastinal emphysema should be more widely recognized, and the possibility of its occurrence should be considered in the case discussed in the question.

Wilson's Disease

Dr. A. J. GLAZEBROOK writes from Edinburgh: The question of a family history of encephalitis lethargica is discussed in the *Journal* of Nov. 13 (p. 631). In a few cases of Wilson's disease that I have seen the condition has usually been misdiagnosed as encephalitis lethargica. This rare condition is familial. One of the cases I have seen was clearly hereditary. The fact that "the girl has an attitude and a way of speaking which are a trifle lethargic," and the family history, suggest to me that Wilson's disease should be excluded before child-bearing can be safely advised. I am interested in hepato-lenticular degeneration and would be grateful for further details of the case.

Subungual Haematoma

Dr. J. BARR STEVENS (London, N.4) writes: The easiest way to treat this condition is as follows. Having cleaned the toe or finger as much as possible, run a tenotomy or other straight knife down to the base of the nail, above the nail but below the cuticle, and turn it sideways with the cutting edge down. Blood will immediately escape by the side of the knife and give relief. The procedure can be done so quickly as to be practically painless, and is quicker and easier than attempting to perforate the nail with knife or drill.

Leicester Christian Medical Association

Dr. E. K. MACDONALD, medical officer of health, Leicester, writes: I have been instructed, as honorary secretary to the above association, to advise you of its formation. Some little while ago a meeting was held of medical practitioners in this area who felt that it was most desirable that the influence of Christianity should be borne in mind in our practice of our profession, and it was decided to form an association with the object of promoting the profession and practice of Christianity among the medical men and women resident in the city of Leicester and counties of Leicestershire and Rutland. Any medical man or woman in the area who accepts the Christian Faith is eligible for membership. Honorary members have been invited, and have accepted our invitation, from the three main Christian denominations—viz., the Lord Bishop of Leicester, the Very Reverend Father Prior (Roman Catholic), and the President of the Free Church Council. In addition, two associate members from each of the three denominations have been appointed from among the clergy. Up to the present we have some forty members, and our first meeting, which was held recently, was addressed by the Bishop of Leicester, who dealt with the question of co-operation between the clerical and medical professions. An interesting programme of meetings has been arranged during the winter. The chairman of the association is Dr. J. V. C. Braithwaite and the council is representative of all denominations.

Corrigendum

Mr. G. F. LANGLEY wishes to correct a serious error in his article on gunshot wound of the innominate artery published on Dec. 4 (p. 711). In lines 13 and 14 of the clinical history the sentence should read: "There was a round wound half an inch in diameter just above the midpoint of the *right* clavicle."